

458/497

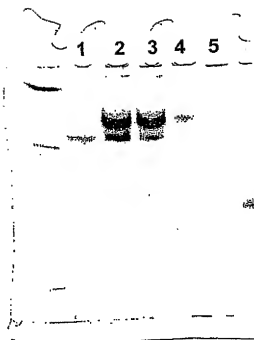


FIG. 157

459/497

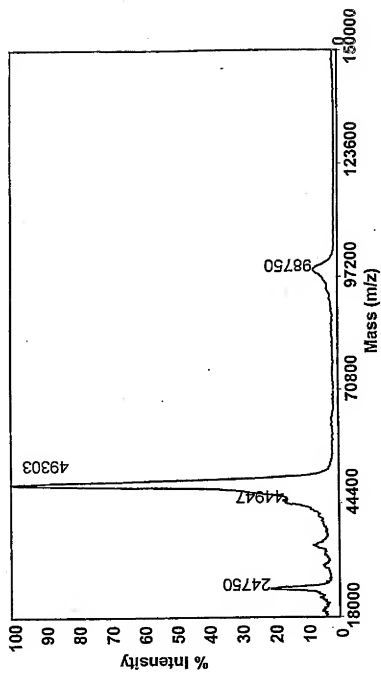


FIG. 158

460/497

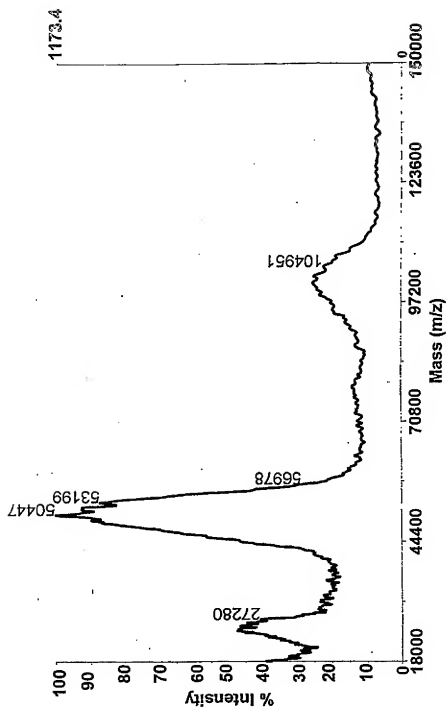


FIG. 159

461/497

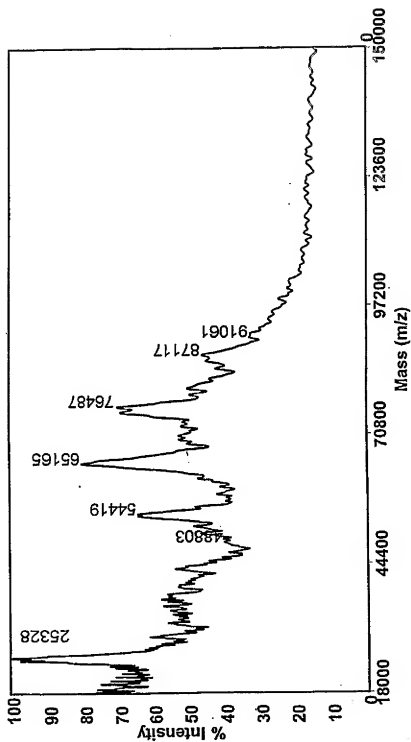


FIG. 160

462/497



FIG. 161

463/497

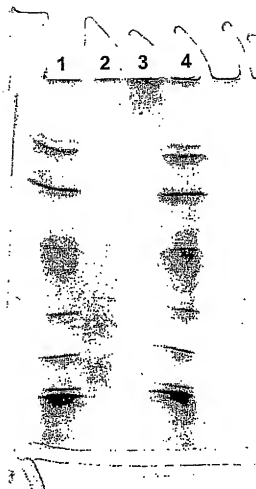


FIG. 162

464/497

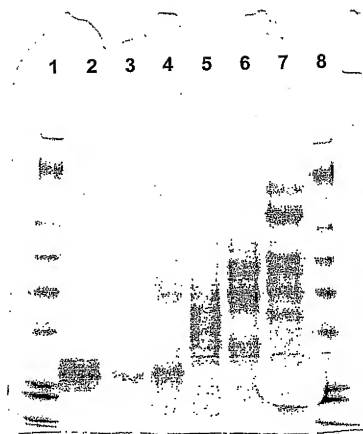


FIG. 163

465/497

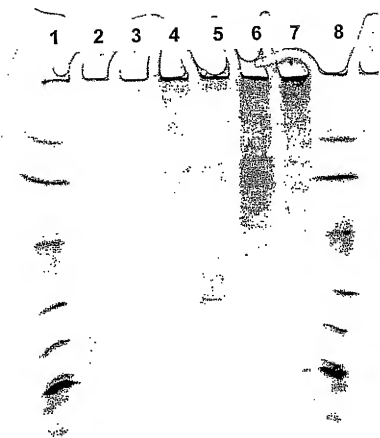


FIG. 164



466/497

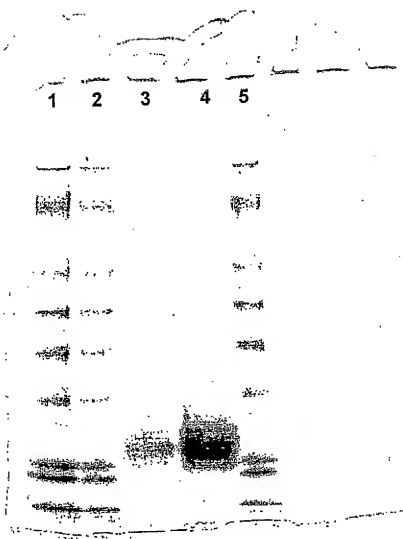


FIG. 165

467/497

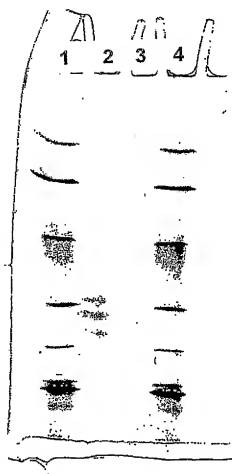


FIG. 166

468/497

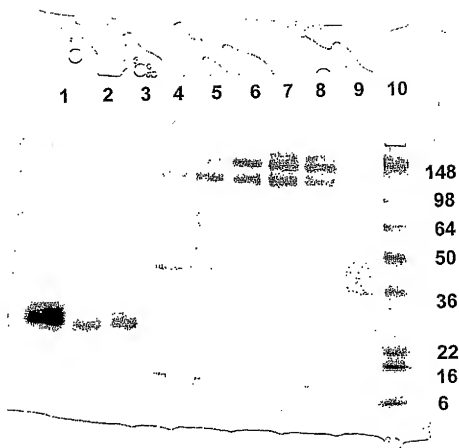


FIG. 167

469/497

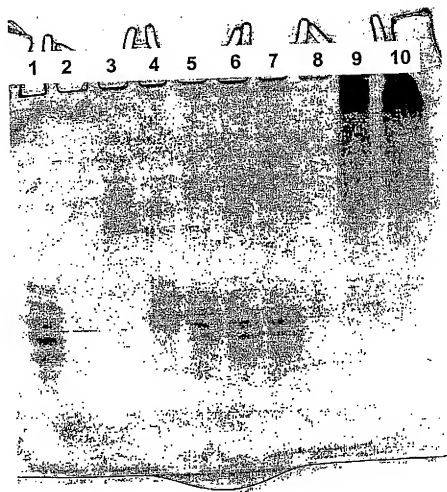


FIG. 168

470/497

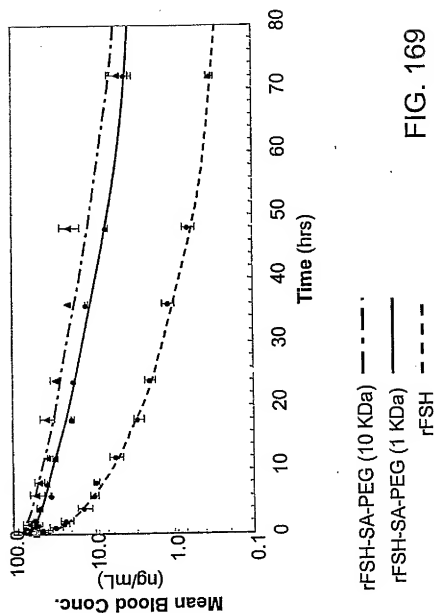


FIG. 169

471/497

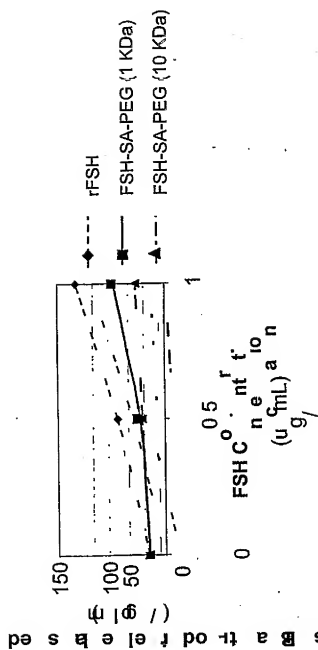


FIG 17

472/497

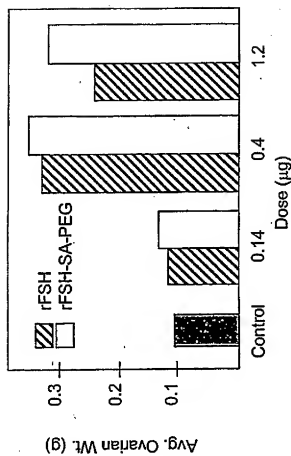


FIG. 171

473/497

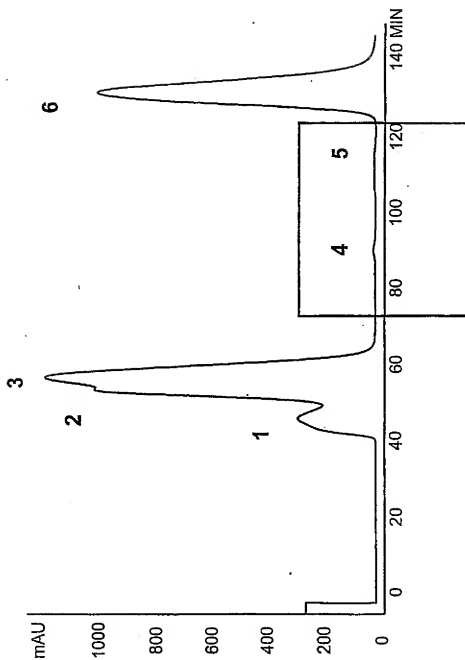


FIG. 172A



474/497

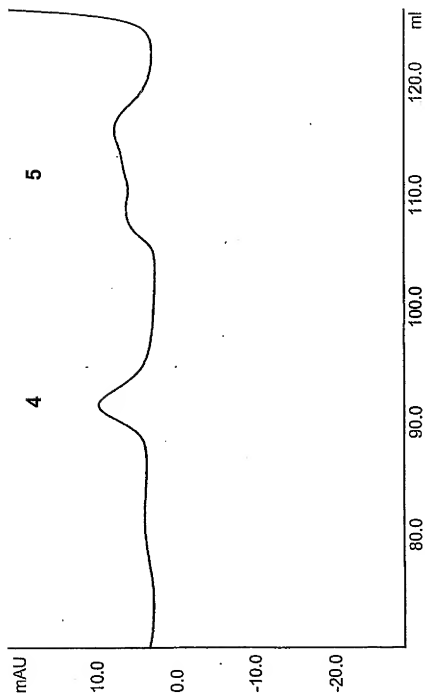


FIG. 172B

475/497

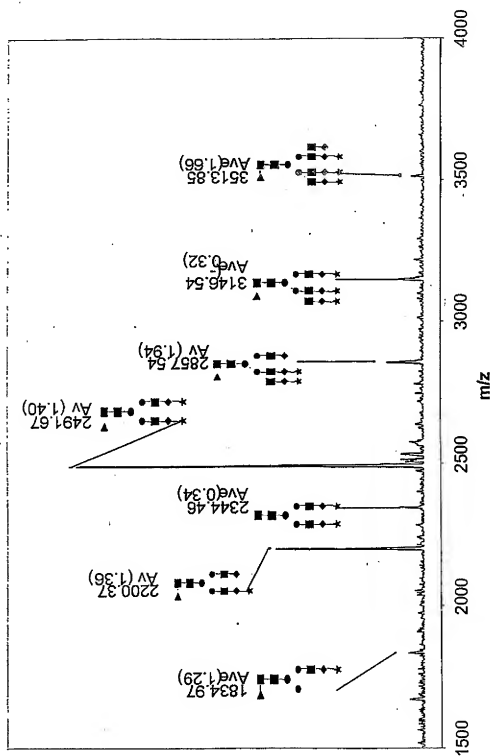


FIG. 173A

476/497

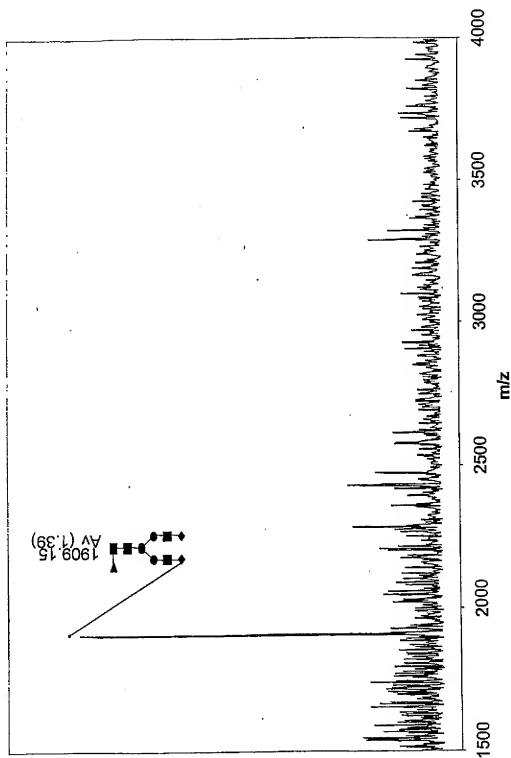


FIG. 173B

477/497

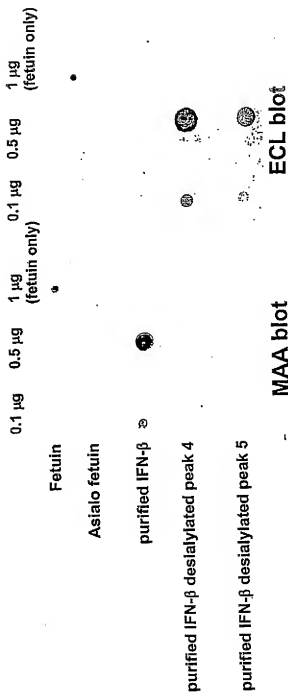


FIG. 174

478/497

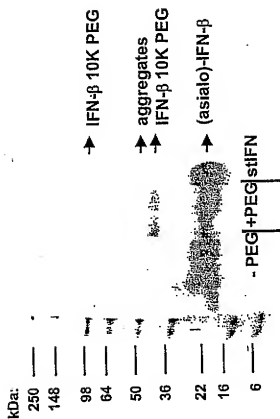


FIG. 175

479/497

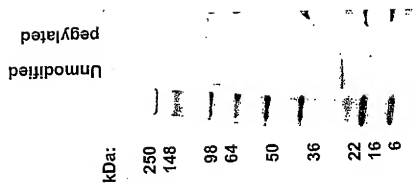


FIG. 176

480/497

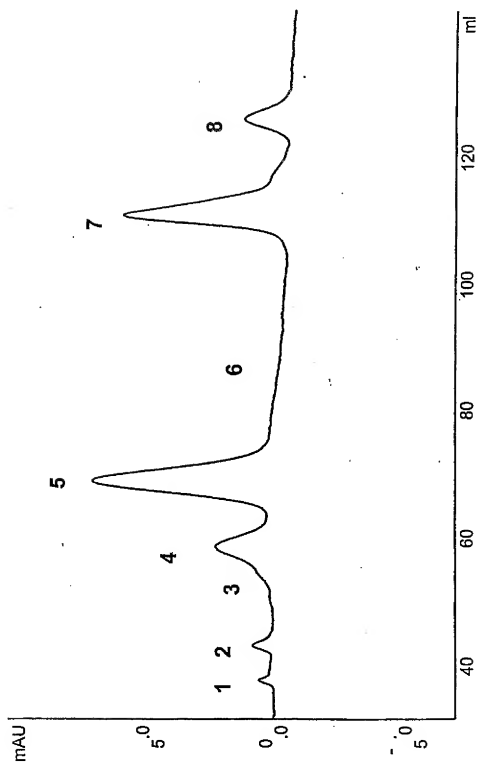
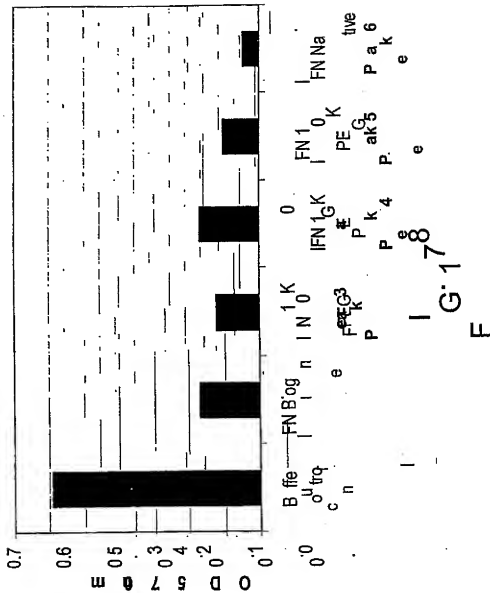


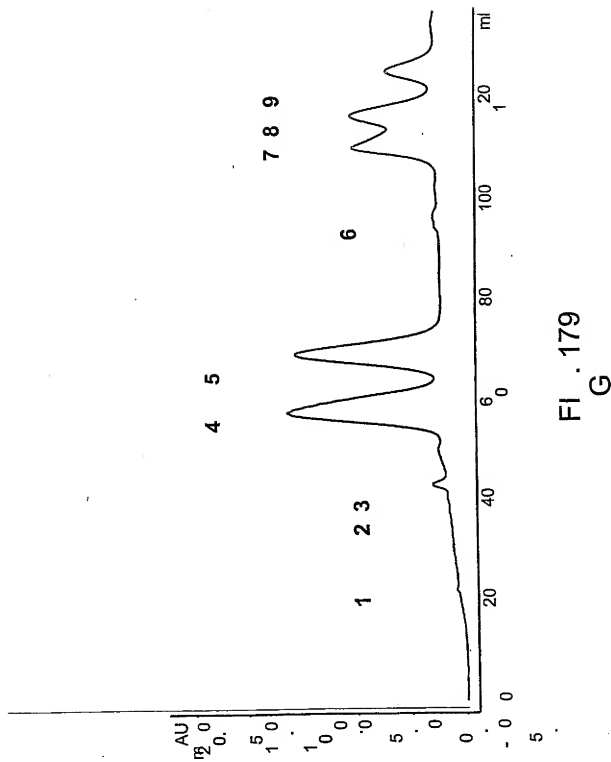
FIG. 177

481/497

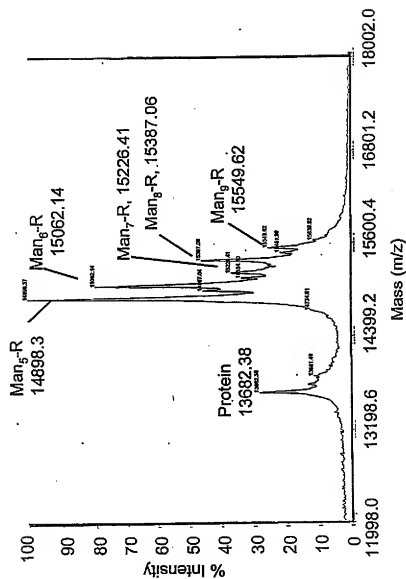




482/497



483/497



484/497

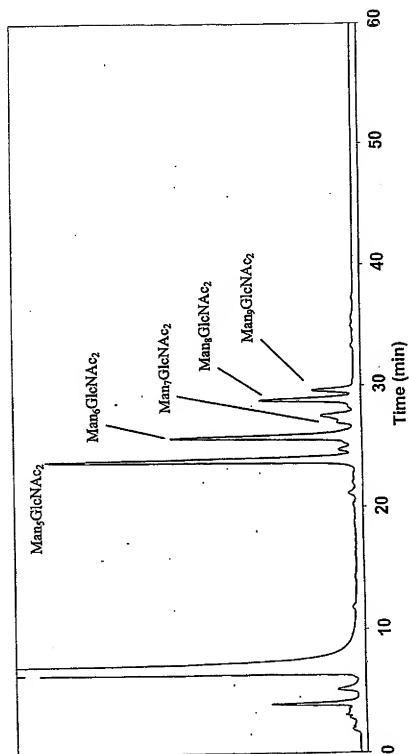
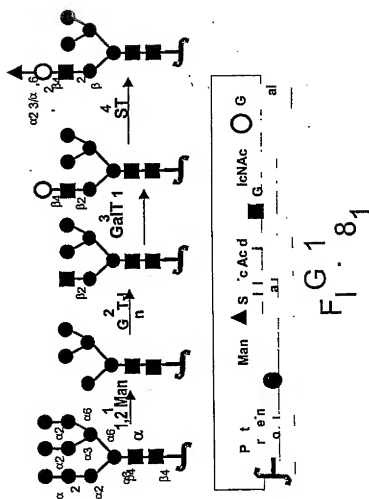


FIG. 180B

485/497



486/497

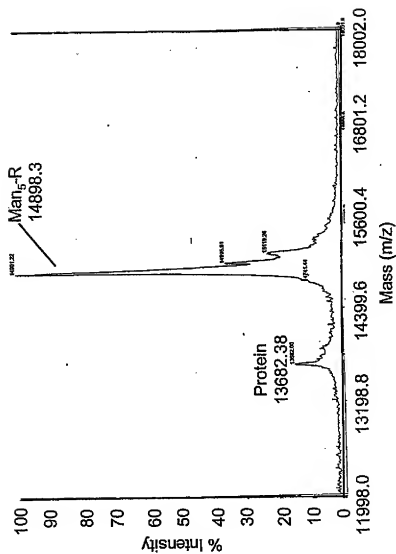


FIG. 182A

487/497

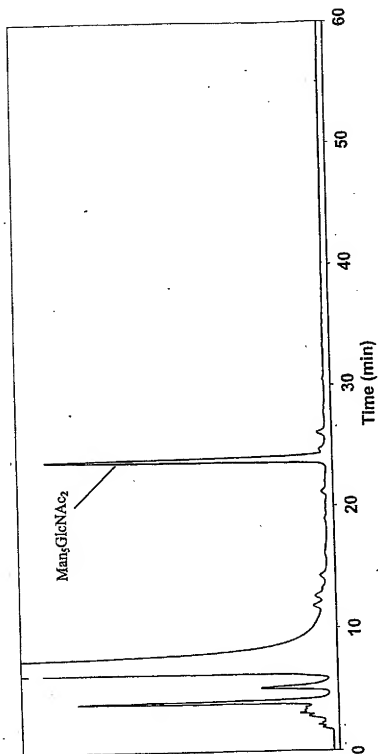
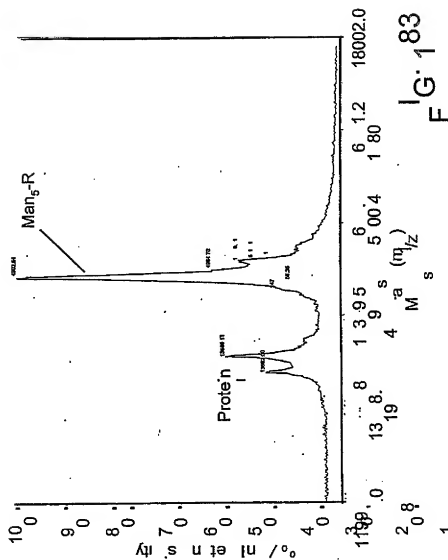


FIG. 182B

488/497







490/497

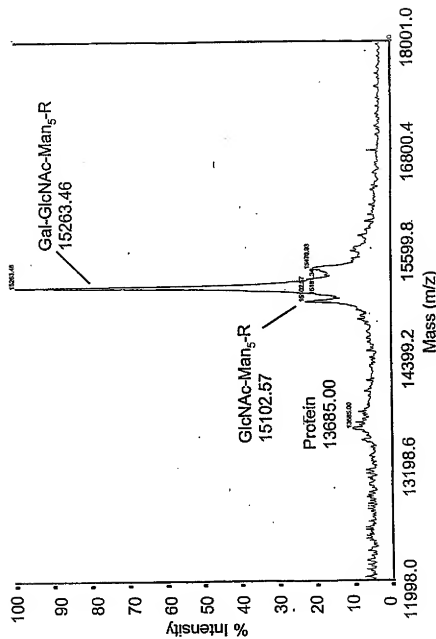
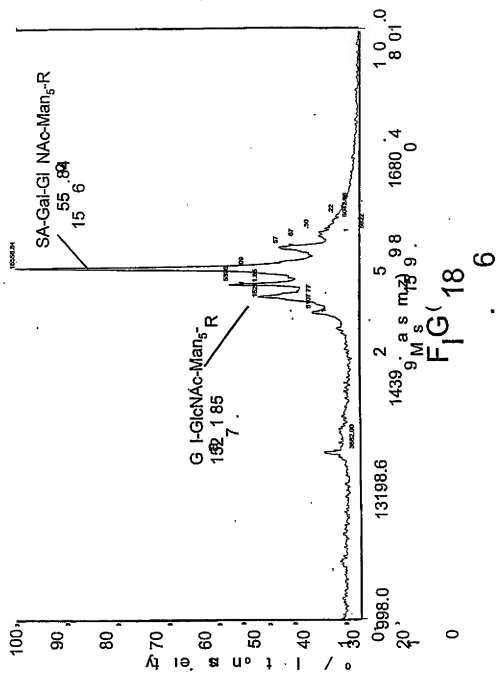
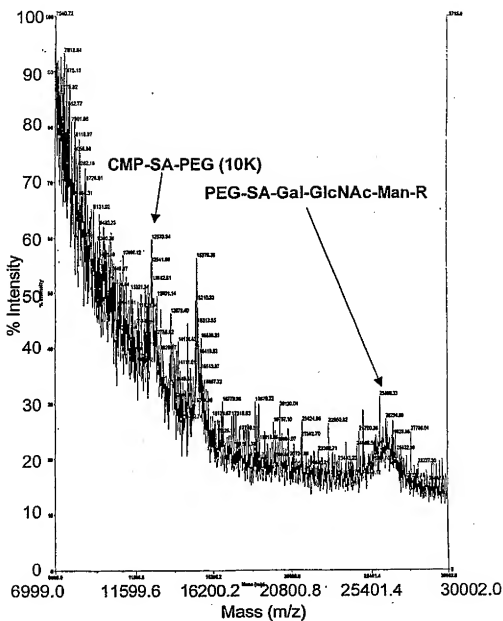


FIG. 185

491/497



492/497





494/497

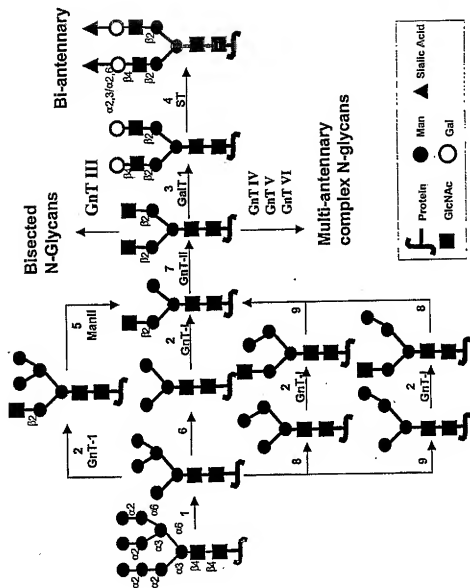


FIG. 188

495/497

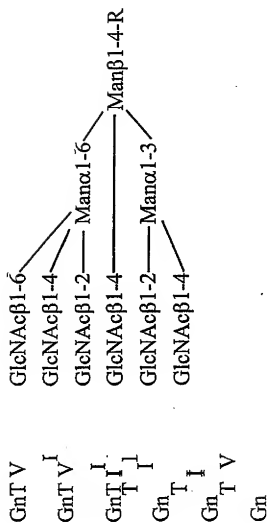


FIG. 189

496/497

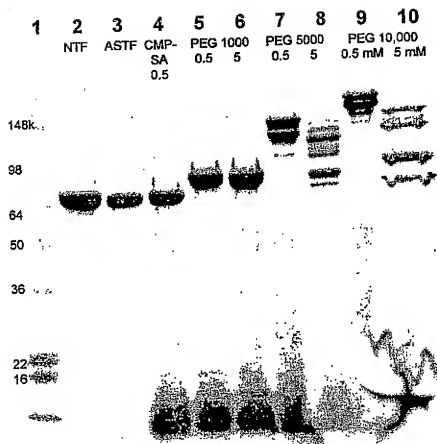


FIG. 190

497/497

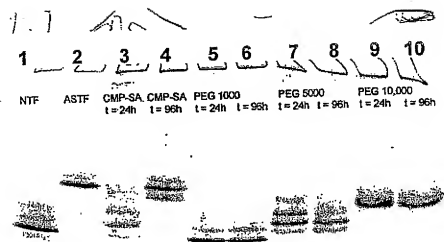


FIG. 191



<110> Neose Technologies, Inc.  
DeFrees, Shawn  
Zopf, David  
Bayer, Robert  
Hakes, David  
Chen, Xi  
Bowe, Caryne

<120> GLYCOPEGYLATION METHODS AND PROTEINS/PEPTIDES PRODUCED BY THE  
METHODS

<130> 040853-01-5051WO

<150> US 60/328,523  
<151> 2001-10-10

<150> US 60/334,233  
<151> 2001-11-28

<150> US 60/334,301  
<151> 2001-11-28

<150> US 60/344,692  
<151> 2001-10-19

<150> US 60/387,292  
<151> 2002-06-07

<150> US 60/391,777  
<151> 2002-06-25

<150> US 60/396,594  
<151> 2002-07-17

<150> US 60/404,249  
<151> 2002-08-16

<150> US 60/407,527  
<151> 2002-08-28

<150> PCT/US02/32263  
<151> 2002-10-09

<150> US 10/360,779  
<151> 2003-02-19

<150> US 10/360,770  
<151> 2003-01-06

<150> US 10/287,994  
<151> 2002-11-05

<160> 75

<170> PatentIn version 3.2

<210> 1  
<211> 525  
<212> DNA

4213&gt; Homo sapiens

<400> 1  
 acccccctgg gccctgccag ctccctgccc cagagcttcc tgcctcaagtg cttagagcaa  
 60

gtgaggaaga tccagggcga tggcgagcgc ctccaggaga agctgtgtgc cacctacaag  
 120

ctgtgccacc cagaggagct ggtgctgtc ggacactctc tgggcatccc ctgggctccc  
 180

ctgagcaget gcccagcca ggccctgcag ctggcaggct gcttgagcca actccatagc  
 240

ggccttttcc tctaccaggg gctcctgcag gccctggaag ggatctcccc cgagttgggt  
 300

cccaccttgg acacactgca gctggacgtc gccgactttg ccaccacat ctggcagcag  
 360

atggaagaac tgggaatggc cctgcccctg cagccacccc aggggtgcat gccggccttc  
 420

gcctctgctt tccagcgccg ggcaggaggg gtctctggtg cctcccatct gcagagcttc  
 480

ctggaggtgt cgtaccgcgt tctacgccac ctggccagc cctga  
 525

<210> 2  
 <211> 174  
 <212> PRT  
 <213> Homo sapiens

<400> 2  
 Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu Lys  
 1 5 10 15

Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu Gln  
 20 25 30

Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu Val  
 35 40 45

Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser Cys  
 50 55 60

Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His Ser  
 65 70 75 80

Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile Ser  
 85 90 95

Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala Asp  
 100 105 110

Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala Pro  
 115 120 125

Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala Phe

Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser Phe  
 145 150 155 160

Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro  
 165 170

<210> 3  
 <211> 1733  
 <212> DNA  
 <213> Homo sapiens

<400> 3  
 ggcctcttta tgtaccaca aaaatctatt ttcaaaaaag ttgctctaag aatatagtta  
 60  
 tcaagttaag taaaatgtca atagcctttt aatttaattt ttaattgttt tatcattctt  
 120  
 tgcaataata aaacattaac ttatatacttt ttaatttaat gtatagaata gagatataca  
 180  
 taggatatgt aaatagatac acagtgtata tgtgattaaa atataatggg agattcaatc  
 240  
 agaaaaaagt ttctaaaaag gctctggggg aaaagaggaa' ggaacaata atgaaaaaaa  
 300  
 tgtgggtgaga aaacacagctg aaaacccatg taaagagtgt ataaagaaag caaaaagaga  
 360  
 agtagaaaagt aacacagggg catttggaat atgtaaacga gtatgttccc tatttaaggc  
 420  
 taggcacaaa gcaaggctctt cagagaacct ggagcctaag gtttaggctc acccatttca  
 480  
 accagtctag cagcatctgc aacatctaca atggccttga cctttgcttt actggtggcc  
 540  
 ctctgggtgc tcagctgcaa gtcaagctgc tctgtgggct gtgatctgcc tcaaacccac  
 600  
 agcctgggta gcaggaggac ctgtgatctc ctggcacaga tgaggagaat ctctcttttc  
 660  
 tctgtcttga aggacagaca tgacttttga ttccccagg aggagtttgg caaccagtcc  
 720  
 caaaaggctg aaaccatccc tgtcctccat gagatgatcc agcagatctt caatctcttc  
 780  
 agcacaaaag actcatctgc tgcctgggat gagacctcc tagacaaatt ctacactgaa  
 840  
 ctctaccagc agctgaatga cctggaagcc tgtgtgatac aggggggtggg ggtgacagag  
 900  
 actcccctga tgaaggagga ctccattctg gctgtgagga aatacttcca aagaatcact  
 960

ctctatctga aagagaagaa atacagccct tgtgcctggg aggttgctcag agcagaaatc  
1020

atgagatctt tttctttgtc aacaaacttg caagaaagt tt taagaagtaa ggaatgaaaa  
1080

ctggttcaac atggaaatga ttttcattga ttctgtatgcc agctcacctt tttatgatct  
1140

gccatttcaa agactcatgt ttctgctatg accatgacac gatttaaato ttttcaaagt  
1200

tttttaggag tattaatcaa cattgtattc agctottaag gcactagtcc cttacagagg  
1260

accatgctga ctgatccatt atctatttaa atatttttaa aatattattt atttaactat  
1320

ttataaaaca aattattttt gttoatatta tgcattgtgc acctttgcac agtggttaat  
1380

gtaataaaat gtgttctttg tatttggtta atttattttg tgtgttcoat tgaacttttg  
1440

ctatggaact ttgtacttg tttattcttt aaaatgaaat tccaagccta attgtgcaac  
1500

ctgattacag aataactggt acaactcatt tgtocatcaa tattatatto aagatataag  
1560

taaaaataaa cttttgttaa accaagttgt atgttgtact caagataaca ggggtgaacct  
1620

aacaaatata attctgctct cttgtgtatt tgatttttgt atgaaaaaaa ctaaaaatgg  
1680

taatcactact taattatcag ttatggtaaa tggatatgaag agaagaagga acg  
1733

<210> 4

<211> 188

<212> PRT

<213> Homo sapiens

<400> 4

Met	Ala	Leu	Thr	Phe	Ala	Leu	Leu	Val	Ala	Leu	Leu	Val	Leu	Ser	Cys
1				5					10					15	

Lys	Ser	Ser	Cys	Ser	Val	Gly	Cys	Asp	Leu	Pro	Gln	Thr	His	Ser	Leu
			20					25					30		

Gly	Ser	Arg	Arg	Thr	Leu	Met	Leu	Leu	Ala	Gln	Met	Arg	Arg	Ile	Ser
		35					40					45			

Leu	Phe	Ser	Cys	Leu	Lys	Asp	Arg	His	Asp	Phe	Gly	Phe	Pro	Gln	Glu
	50					55					60				

Glu	Phe	Gly	Asn	Gln	Phe	Gln	Lys	Ala	Glu	Thr	Ile	Pro	Val	Leu	His
	65					70				75					80

Glu Met Ile Gln Glu Ile Phe Asn Leu Phe Ser Thr Lys Asp Ser Ser  
85 95

Ala Ala Trp Asp Glu Thr Leu Leu Asp Lys Phe Tyr Thr Glu Leu Tyr  
100 105 110

Gln Gln Leu Asn Asp Leu Glu Ala Cys Val Ile Gln Gly Val Gly Val  
115 120 125

Thr Glu Thr Pro Leu Met Lys Glu Asp Ser Ile Leu Ala Val Arg Lys  
130 135 140

Tyr Phe Gln Arg Ile Thr Leu Tyr Leu Lys Glu Lys Lys Tyr Ser Pro  
145 150 155 160

Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Phe Ser Leu  
165 170 175

Ser Thr Asn Leu Gln Glu Ser Leu Arg Ser Lys Glu  
180 185

<210> 5

<211> 757

<212> DNA

<213> Homo sapiens

<400> 5

atgaccaaca agtgtctcct ccaaattgct ctctgttgtt gottctccac tacagctctt  
60

tccatgagct acaacttgct tggattccta caaagaagca gcaattttca gtgtcagaag  
120

ctctgtggc aattgaatgg gaggttgaa tattgoccta aggacaggat gaactttgac  
180

atccctgagg agattaagca gctgcagcag ttccagaagg aggacgcgcg attgaccatc  
240

tatgagatgc tccagaacat ctttgctatt ttcagacaag attcatctag cactggctgg  
300

aatgagacta ttgttgagaa cctcctggct aatgtctatc atcagataaa ccatctgaag  
360

acagtctctg aagaaaaact ggagaaagaa gattttacca ggggaaaact catgagcagt  
420

ctgcacctga aaagatatta tgggaggatt ctgcattacc tgaaggccaa ggagtacagt  
480

cactgtgcct ggaccatagt cagagtggaa atcctaagga acttttactt cattaacaga  
540

cttacaggtt acctccgaaa ctgaagatct cctagcctgt cctctggga ctggacaatt  
600

gcttcaagca ttcttcaacc agcagatgct gtttaagtga ctgatggcta atgtactgca  
660

aatgaaaagga cactagaaga ttttgaaatt ttattataat tatgagttat ttttatttat  
720

ttaaatttta ttttgaaaa taaattattt ttggtgc  
757

<210> 6  
<211> 187  
<212> PRT  
<213> Homo sapiens

<400> 6  
Met Thr Asn Lys Cys Leu Leu Gln Ile Ala Leu Leu Leu Cys Phe Ser  
1 5 10 15  
Thr Thr Ala Leu Ser Met Ser Tyr Asn Leu Leu Gly Phe Leu Gln Arg  
20 25 30  
Ser Ser Asn Phe Gln Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg  
35 40 45  
Leu Glu Tyr Cys Leu Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu  
50 55 60  
Ile Lys Gln Leu Gln Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile  
65 70 75 80  
Tyr Glu Met Leu Gln Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser  
85 90 95  
Ser Thr Gly Trp Asn Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val  
100 105 110  
Tyr His Gln Ile Asn His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu  
115 120 125  
Lys Glu Asp Phe Thr Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys  
130 135 140  
Arg Tyr Tyr Gly Arg Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser  
145 150 155 160  
His Cys Ala Trp Thr Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr  
165 170 175  
Phe Ile Asn Arg Leu Thr Gly Tyr Leu Arg Asn  
180 185

<210> 7  
<211> 1332  
<212> DNA  
<213> Homo sapiens

<400> 7  
atgggtctccc aggcacctcag gctcctctgc cttctgcttg ggcttcaggg ctgctctggct  
60

gcagtctcttg taaccaggga ggaagccac gggtctctgc accggcgccg gcgcgccaac  
120

gagttccttg aggaagctcgc gccgggctcc ctggagaggg agtgcaagga ggagcagtgc  
180

tccttcgagg agggcccgga gatcttcaag gacgcggaga ggacgaagct gttctgatt  
240

tcttacagt atggggacca gtgtgcctca agtccatgcc agaatggggg ctctcgcaag  
300

gaccagctcc agtctctatat ctgcttctgc ctccctgctc tcgagggccg gaactgtgag  
360

acgcacaagg atgaccagct gatctgtgtg aacgagaacg gccgctgtga gcagtactgc  
420

agtgaaccaca cgggcaccaa gcgctcctgt cggtgccagc aggggtactc tctgctggca  
480

gacgggggtg bctgcacacc cacagtgaa tatccatgtg gaaaaatacc tattctagaa  
540

aaaagaaatg ccagcaaacc ccaaggccga attgtggggg gcaaggtgtg ccccaaaggg  
600

gagtggtccat ggcaggtcct gttgttggtg aatggagctc agttgtgtgg ggggaccctg  
660

atcaacacca tctgggtggt ctccgcggcc cactgtttcg acaaaatcaa gaactggagg  
720

aaactgatcg cgggtgctggg cgagcagcag ctacgcagc acgacgggga tgagcagagc  
780

cggcgggtgg cgcaggtcat catcccacg acgtacgtcc cgggcaccac caaccacgac  
840

atcgcgctgc tccgctgca ccagcccggt gtcctcactg accatgtggt gccctctg  
900

ctgccgaac ggacgttctc tgagaggacg ctggccttcg tgcgcttctc attggtcagc  
960

ggctggggcc agctgctgga ccgtggcgcc acggccctgg agctcatggt gctcaactg  
1020

ccccggtga tgaccagga ctgcctgcag cagtcacgga aggtgggaga ctccccaat  
1080

atcacggagt acatgttctg tgccggctac tcggaaggca gcaaggactc ctgcaagggg  
1140

gacagtggag gccacatgc caccactac cggggcacgt ggtacctgac gggcatctg  
1200

agctggggcc agggctgcgc aaccgtgggc cactttgggg tgtacaccag ggtctccag  
1260

tacatcgagt ggctgcaaaa gctcatgcgc tcagagccac gcccaggagt cctcctcgga  
1320

gccccatttc cc  
1332

<210> 8  
<211> 444  
<212> PRT  
<213> Homo sapiens

<400> 8  
Met Val Ser Gln Ala Leu Arg Leu Leu Cys Leu Leu Leu Gly Leu Gln  
1 5 10 15  
Gly Cys Leu Ala Ala Val Phe Val Thr Gln Glu Glu Ala His Gly Val  
20 25 30  
Leu His Arg Arg Arg Arg Ala Asn Ala Phe Leu Glu Glu Leu Arg Pro  
35 40 45  
Gly Ser Leu Glu Arg Glu Cys Lys Glu Glu Gln Cys Ser Phe Glu Glu  
50 55 60  
Ala Arg Glu Ile Phe Lys Asp Ala Glu Arg Thr Lys Leu Phe Trp Ile  
65 70 75 80  
Ser Tyr Ser Asp Gly Asp Gln Cys Ala Ser Ser Pro Cys Gln Asn Gly  
85 90 95  
Gly Ser Cys Lys Asp Gln Leu Gln Ser Tyr Ile Cys Phe Cys Leu Pro  
100 105 110  
Ala Phe Glu Gly Arg Asn Cys Glu Thr His Lys Asp Asp Gln Leu Ile  
115 120 125  
Cys Val Asn Glu Asn Gly Gly Cys Glu Gln Tyr Cys Ser Asp His Thr  
130 135 140  
Gly Thr Lys Arg Ser Cys Arg Cys His Glu Gly Tyr Ser Leu Leu Ala  
145 150 155 160  
Asp Gly Val Ser Cys Thr Pro Thr Val Glu Tyr Pro Cys Gly Lys Ile  
165 170 175  
Pro Ile Leu Glu Lys Arg Asn Ala Ser Lys Pro Gln Gly Arg Ile Val  
180 185 190  
Gly Gly Lys Val Cys Pro Lys Gly Glu Cys Pro Trp Gln Val Leu Leu  
195 200 205  
Leu Val Asn Gly Ala Gln Leu Cys Gly Gly Thr Leu Ile Asn Thr Ile  
210 215 220  
Trp Val Val Ser Ala Ala His Cys Phe Asp Lys Ile Lys Asn Trp Arg  
225 230 235 240  
Asn Leu Ile Ala Val Leu Gly Glu His Asp Leu Ser Glu His Asp Gly  
245 250 255  
Asp Glu Gln Ser Arg Arg Val Ala Gln Val Ile Ile Pro Ser Thr Tyr  
260 265 270  
Val Pro Gly Thr Thr Asn His Asp Ile Ala Leu Leu Arg Leu His Gln  
275 280 285



Pro Val Val Leu Thr Asp His Val Val Pro Leu Cys Leu Pro Glu Arg  
 290 295 300

Thr Phe Ser Glu Arg Thr Leu Ala Phe Val Arg Phe Ser Leu Val Ser  
 305 310 315 320

Gly Trp Gly Gln Leu Leu Asp Arg Gly Ala Thr Ala Leu Glu Leu Met  
 325 330 335

Val Leu Asn Val Pro Arg Leu Met Thr Gln Asp Cys Leu Gln Gln Ser  
 340 345 350

Arg Lys Val Gly Asp Ser Pro Asn Ile Thr Glu Tyr Met Phe Cys Ala  
 355 360 365

Gly Tyr Ser Asp Gly Ser Lys Asp Ser Cys Lys Gly Asp Ser Gly Gly  
 370 375 380

Pro His Ala Thr His Tyr Arg Gly Thr Trp Tyr Leu Thr Gly Ile Val  
 385 390 395 400

Ser Trp Gly Gln Gly Cys Ala Thr Val Gly His Phe Gly Val Tyr Thr  
 405 410 415

Arg Val Ser Gln Tyr Ile Glu Trp Leu Gln Lys Leu Met Arg Ser Glu  
 420 425 430

Pro Arg Pro Gly Val Leu Leu Arg Ala Pro Phe Pro  
 435 440

<210> 9  
 <211> 1437  
 <212> DNA  
 <213> Homo sapiens

<400> 9  
 atgcagcgcg tgaacatgat catggcagaa tcaccaagcc tcatacccat ctgcctttta  
 60

ggatatctac tcagtgtctga atgtacagtt tttcttgatc atgaaaacgc caacaaaatt  
 120

ctgaatcggc caaagaggtta taattcaggt aaattggaag agtttgttca agggaaacott  
 180

gagagagaat gtatggaaga aaagtgtagt ttgaagaac cacgagaagt ttttgaaaac  
 240

actgaaaaga caactgaatt ttggaagcag tatgttgatg gagatcagtg tgagtccaat  
 300

ccatgttttaa atggcggcag ttgcaaggat gacattaatt cctatgaatg ttgggtgcc  
 360

tttgatttg aaggaaagaa ctgtgaatta gatgtaacat gtaacattaa gaatggcaga  
 420

tgcgagcagt tttgtaaaaa tagtgctgat aacaaggtgg ttgctcctg tactgaggga  
 480

tātōgācttg cāgāāaacca gaagtccctgt gaaccagcag tgccatttcc atgtggaaga  
540

gtttctgttt cacaaacttc taagctcacc cgtgctgagg ctgtttttcc tgatgtggac  
600

tatgtaaatc ctactgaagc tgaaaccaatt ttggataaca tcaactcaagg cacccaatca  
660

tttaatgact tcaactcgggt tgttggtgga gaagatgcc aaccagggtca attcccttgg  
720

caggttgttt tgaatggtaa agttgatgca ttctgtggag gctctatcgt taatgaaaaa  
780

tggattgtaa ctgctgccca ctgtgttgaa actggtgtta aaattacagt tgcgcagggt  
840

gaacataata ttgaggagac agaacataca gagcaaaagc gaaatgtgat tcgagcaatt  
900

attcctcacc acaactacaa tgcagctatt aataagtaca accatgacat tgcccttctg  
960

gaactggagc aacccttagt gctaaacagc tacgttacac ctatttgcat tctgacaag  
1020

gaatacacga acatcttctc caaatttga ttggctatg taagtggctg ggcaagagtc  
1080

ttccacaaag ggagatcagc tttagttctt cagtacctta gagttccact tgttgaccga  
1140

gccacatgtc ttgatctac aaagttcacc atctataaca acatgttctg tgcgtgcttc  
1200

catgaaggag gtagagattc atgtcaagga gatagtggg gaccccatgt tactgaagtg  
1260

gaagggacca gtttcttaac tggaattatt agctgggggtg aagagtgtgc aatgaaaggc  
1320

aaatatggaa tatataccaa ggtatcccg tatgtcaact ggattaagga aaaacaaag  
1380

ctcacttaat gaaagatgga ttccaaggt taattcattg gaattgaaaa ttaacag  
1437

<210> 10  
<211> 462  
<212> PRT  
<213> Homo sapiens

<400> 10  
Met Gln Arg Val Asn Met Ile Met Ala Glu Ser Pro Ser Leu Ile Thr  
1 5 10 15

Ile Cys Leu Leu Gly Tyr Leu Leu Ser Ala Glu Cys Thr Val Phe Leu  
25 30

Asp His Glu Asn Ala Asn Lys Ile Leu Asn Arg Pro Lys Arg Tyr Asn

Ser	Gly	Lys	Leu	Glu	Phe	Val	Gln	Gly	Asn	Leu	Glu	Arg	Glu	Asn	60
50						55									
Met	Glu	Glu	Lys	Cys	Ser	Phe	Glu	Glu	Pro	Arg	Glu	Val	Phe	Glu	Asn
65					70					75					80
Thr	Glu	Lys	Thr	Thr	Glu	Phe	Trp	Lys	Gln	Tyr	Val	Asp	Gly	Asp	Gln
				85					90					95	
Cys	Glu	Ser	Asn	Pro	Cys	Leu	Asn	Gly	Gly	Ser	Cys	Lys	Asp	Asp	Ile
			100					105					110		
Asn	Ser	Tyr	Glu	Cys	Trp	Cys	Pro	Phe	Gly	Phe	Glu	Gly	Lys	Asn	Cys
		115					120						125		
Glu	Leu	Asp	Val	Thr	Cys	Asn	Ile	Lys	Asn	Gly	Arg	Cys	Glu	Gln	Phe
						130		135				140			
Cys	Lys	Asn	Ser	Ala	Asp	Asn	Lys	Val	Val	Cys	Ser	Cys	Thr	Glu	Gly
145					150					155					160
Tyr	Arg	Leu	Ala	Glu	Asn	Gln	Lys	Ser	Cys	Glu	Pro	Ala	Val	Pro	Phe
				165					170					175	
Pro	Cys	Gly	Arg	Val	Ser	Val	Ser	Gln	Thr	Ser	Lys	Leu	Thr	Arg	Ala
			180					185						190	
Glu	Ala	Val	Phe	Pro	Asp	Val	Asp	Tyr	Val	Asn	Pro	Thr	Glu	Ala	Glu
						195		200				205			
Thr	Ile	Leu	Asp	Asn	Ile	Thr	Gln	Gly	Thr	Gln	Ser	Phe	Asn	Asp	Phe
	210					215						220			
Thr	Arg	Val	Val	Gly	Gly	Glu	Asp	Ala	Lys	Pro	Gly	Gln	Phe	Pro	Trp
225					230					235					240
Gln	Val	Val	Leu	Asn	Gly	Lys	Val	Asp	Ala	Phe	Cys	Gly	Gly	Ser	Ile
				245					250					255	
Val	Asn	Glu	Lys	Trp	Ile	Val	Thr	Ala	Ala	His	Cys	Val	Glu	Thr	Gly
				260				265						270	
Val	Lys	Ile	Thr	Val	Val	Ala	Gly	Glu	His	Asn	Ile	Glu	Glu	Thr	Glu
		275					280					285			
His	Thr	Glu	Gln	Lys	Arg	Asn	Val	Ile	Arg	Ala	Ile	Ile	Pro	His	His
	290					295					300				
Asn	Tyr	Asn	Ala	Ala	Ile	Asn	Lys	Tyr	Asn	His	Asp	Ile	Ala	Leu	Leu
305					310					315					320
Glu	Leu	Asp	Glu	Pro	Leu	Val	Leu	Asn	Ser	Tyr	Val	Thr	Pro	Ile	Cys
				325					330					335	
Ile	Ala	Asp	Lys	Glu	Tyr	Thr	Asn	Ile	Phe	Leu	Lys	Phe	Gly	Ser	Gly
				340				345					350		
Tyr	Val	Ser	Gly	Trp	Ala	Arg	Val	Phe	His	Lys	Gly	Arg	Ser	Ala	Leu
		355					360					365			

Val Leu Gln Tyr Leu Arg Val Pro Leu Val Asp Arg Ala Thr Cys Leu  
 370 375 380

Arg Ser Thr Lys Phe Thr Ile Tyr Asn Asn Met Phe Cys Ala Gly Phe  
 385 390 395 400

His Glu Gly Gly Arg Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro His  
 405 410 415

Val Thr Glu Val Glu Gly Thr Ser Phe Leu Thr Gly Ile Ile Ser Trp  
 420 425 430

Gly Glu Glu Cys Ala Met Lys Gly Lys Tyr Gly Ile Tyr Thr Lys Val  
 435 440 445

Ser Arg Tyr Val Asn Trp Ile Lys Glu Lys Thr Lys Leu Thr  
 450 455 460

<210> 11

<211> 603

<212> DNA

<213> Homo sapiens

<400> 11

atggattact acagaaaata tgcagctatc tttctgggtc cattgtcggg gtttctgcat  
 60

gtttctccatt ccgctcctga tgtgcaggat tgcccagaat gcacgctaca ggaaaacca  
 120

ttcttctccc agccgggtgc cccaatactt cagtgcattg gctgctgctt ctctagagca  
 180

tatccactc cactaaggtc caagaagacg atgttggtcc aaaagaacgt cacctcagag  
 240

tccacttgct gtgtagctaa atcatataac agggtcacag taatgggggg tttcaaagt  
 300

gagaaccaca cggcgtgcc aatgcagtact tggtattatc acaaatotta aatgttttac  
 360

caagtgcgtg cttgatgact gctgatttct tggaatggaa aattaagttg tttagtgttt  
 420

atggctttgt gagataaaac totccttttc cttaccatac cacttttgaca cgcttcaagg  
 480

atatactgca gctttactgc cttcctcgtt atcctacagt acaatcagca gtctagttct  
 540

tttctatttg aatgaataca gcattaagct tgttccactg caaataaagc cttttaaatc  
 600

atc  
 603

<210> 12

<211> 116

<212> PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 12

Met Asp Tyr Tyr Arg Lys Tyr Ala Ala Ile Phe Leu Val Thr Leu Ser  
1 5 10 15Val Phe Leu His Val Leu His Ser Ala Pro Asp Val Gln Asp Cys Pro  
20 25 30Glu Cys Thr Leu Gln Glu Asn Pro Phe Phe Ser Gln Pro Gly Ala Pro  
35 40 45Ile Leu Gln Cys Met Gly Cys Cys Phe Ser Arg Ala Tyr Pro Thr Pro  
50 55 60Leu Arg Ser Lys Lys Thr Met Leu Val Gln Lys Asn Val Thr Ser Glu  
65 70 75 80Ser Thr Cys Cys Val Ala Lys Ser Tyr Asn Arg Val Thr Val Met Gly  
85 90 95Gly Phe Lys Val Glu Asn His Thr Ala Cys His Cys Ser Thr Cys Tyr  
100 105 110Tyr His Lys Ser  
115

&lt;210&gt; 13

&lt;211&gt; 390

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 13

atgaagacac tccagttttt ctctcttttc tgttgctgga aagcaatctg ctgcaatagc  
60tgtgagctga ccaacatcac cattgcaata gagaagaag aatgtcgttt ctgcataagc  
120atcaacacca ctgggtgtgc tggctactgc tacaccaggg atctggtgta taaggaccca  
180gccaggccca aaatccagaa aacatgtacc ttcaaggaac tggtatatga aacagtgaga  
240gtgccgggt gtgctcacca tgcagattcc ttgtatacat acccagtggc caccagtgt  
300cactgtggca agtgtgacag cgacagcact gattgtactg tgcgaggcct ggggccacgc  
360tactgtcct ttggtgaaat gaaagaataa  
390

&lt;210&gt; 14

&lt;211&gt; 129

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 14

Met Lys Thr Leu Gln Phe Phe Phe Leu Phe Cys Cys Trp Lys Ala Ile

1 5 10 15  
 Cys Cys Asn Ser Cys Glu Leu Thr Asn Ile Thr Ile Ala Ile Glu Lys  
 20 25 30  
 Glu Glu Cys Arg Phe Cys Ile Ser Ile Asn Thr Thr Trp Cys Ala Gly  
 35 40 45  
 Tyr Cys Tyr Thr Arg Asp Leu Val Tyr Lys Asp Pro Ala Arg Pro Lys  
 50 55 60  
 Ile Gln Lys Thr Cys Thr Phe Lys Glu Leu Val Tyr Glu Thr Val Arg  
 65 70 75 80  
 Val Pro Gly Cys Ala His His Ala Asp Ser Leu Tyr Thr Tyr Pro Val  
 85 90 95  
 Ala Thr Gln Cys His Cys Gly Lys Cys Asp Ser Asp Ser Thr Asp Cys  
 100 105 110  
 Thr Val Arg Gly Leu Gly Pro Ser Tyr Cys Ser Phe Gly Glu Met Lys  
 115 120 125

Glu

<210> 15  
 <211> 1342  
 <212> DNA  
 <213> Homo sapiens

<400> 15  
 ccgggagccg gaccggggcc accgcgccg ctctgtctcg acacgcgcc cctggacag  
 60

ccgcctctc ctccaggccc gtggggctgg cctgcaccg ccgagcttc cgggatgagg  
 120

gccccgggtg tggtaaccgg gcgcgcccca ggtogctgag ggaccccgcc caggcgogga  
 180

gatgggggtg cacgaatgtc ctgcctggct gtggcttctc ctgtccctgc tgtogctccc  
 240

tctgggcctc ccagtctggg gcgccccacc aagcctcctc tgtgacagcc gactcctgga  
 300

gaggtacctc ttggaggcca aggaggccga gaatatcagc acgggctgtg ctgaacctg  
 360

cagcttgaat gagaatatca ctgtcccaga caccaaagt aatttctatg cctggaagag  
 420

gatggaggtc gggcagcagg ccgtagaagt ctggcagggc ctggccctgc tgtcggaagc  
 480

tgtctgcgg gccagggccc tgttggtcaa ctcttccag ccgtgggagc cctgcagct  
 540

gcatgtggat aaagcogtca gtggccttgc cagcctcacc actctgcttc gggctctgcg  
 600

agcccagaag gaagccatct ccctccaga tgcggcctca gctgctccac tccgaacaat  
 660  
 cactgctgac acttttcogca aactcttcog agtctactcc aatttctctcc ggggaaagct  
 720  
 gaagctgtac acagggggagg cctgcaggac aggggacaga tgaccagggtg tgtccacctg  
 780  
 ggcataacca ccacctccct caccaacatt gcttgtgcca caccctcccc cgccactcct  
 840  
 gaaccccgct gaggggctct cagctcagcg ccagcctgtc ccatggacac tccagtcca  
 900  
 gcaatgacat ctacaggggac agaggaactg tccagagagc aactctgaga tctaaggatg  
 960  
 tcacagggcc aacttgaggg ccagagcag gaagcattca gagagcagct ttaaaactcag  
 1020  
 ggacagagcc atgtgggaa gacgcctgag ctactcggc accctgcaaa atttgatgcc  
 1080  
 aggacacgct ttggaggcga tttacctgtt ttgcaccta ccacaggga caggatgacc  
 1140  
 tggagaactt aggtggcaag ctgtgacttc tccaggtctc aogggcatgg gcactccctt  
 1200  
 ggtggcaaga gcccccctga caccgggggt gtgggaacca tgaagacagg atgggggctg  
 1260  
 gcctctggct ctacgggggt ccaagttttg tgtattcttc aacctcattg acaagaactg  
 1320  
 aaaccaccaa aaaaaaaaaa aa  
 1342

<210> 16  
 <211> 193  
 <212> PRT  
 <213> Homo sapiens

<400> 16  
 Met Gly Val His Glu Cys Pro Ala Trp Leu Trp Leu Leu Ser Leu  
 1 5 10 15

Leu Ser Leu Pro Leu Gly Leu Pro Val Leu Gly Ala Pro Pro Arg Leu  
 20 25 30

Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu Leu Glu Ala Lys Glu  
 35 40 45

Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His Cys Ser Leu Asn Glu  
 50 55 60

Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe Tyr Ala Trp Lys Arg  
 65 70 75 80

Met Glu Val Gly Gln Gln Ala Val Glu Val Trp Gln Gly Leu Ala Leu  
85 90 95

Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu Leu Val Asn Ser Ser  
100 105 110

Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp Lys Ala Val Ser Gly  
115 120 125

Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu Arg Ala Gln Lys Glu  
130 135 140

Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala Pro Leu Arg Thr Ile  
145 150 155 160

Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val Tyr Ser Asn Phe Leu  
165 170 175

Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala Cys Arg Thr Gly Asp  
180 185 190

Arg

<210> 17  
<211> 435  
<212> DNA  
<213> Homo sapiens

<400> 17  
atgtggctgc agagcctgct gctcttgggc actgtggcct gcagcatctc tgcacccgcc  
60  
cgctcgccca gccccagcac gcagccctgg gagcatgtga atgccatcca ggaggcccg  
120  
cgtctcctga acctgagtag agacactgct gctgagatga atgaaacagt agaagtcac  
180  
tcagaaatgt ttgacctoca ggagccgacc tgcctacaga cccgcctgga gctgtacaag  
240  
cagggcctgc ggggcagcct caccagctc aagggcccct tgaccatgat ggccagccac  
300  
tacaagcagc actgccctcc aaccccgaa acttctctgt caaaccagat tatcaccttt  
360  
gaaagtttca aagagaaact gaaggacttt ctgcttgta tccccttga ctgctgggag  
420  
ccagtcagg agtga  
435

<210> 18  
<211> 144  
<212> PRT  
<213> Homo sapiens

<400> 18  
Met Trp Leu Gln Ser Leu Leu Leu Leu Gly Thr Val Ala Cys Ser Ile



1 5 10 15

Ser Ala Pro Ala Arg Ser Pro Ser Pro Ser Thr Gln Pro Trp Glu His  
20 25 30

Val Asn Ala Ile Gln Glu Ala Arg Arg Leu Leu Asn Leu Ser Arg Asp  
35 40 45

Thr Ala Ala Glu Met Asn Glu Thr Val Glu Val Ile Ser Glu Met Phe  
50 55 60

Asp Leu Gln Glu Pro Thr Cys Leu Gln Thr Arg Leu Glu Leu Tyr Lys  
65 70 75 80

Gln Gly Leu Arg Gly Ser Leu Thr Lys Leu Lys Gly Pro Leu Thr Met  
85 90 95

Met Ala Ser His Tyr Lys Gln His Cys Pro Pro Thr Pro Glu Thr Ser  
100 105 110

Cys Ala Thr Gln Ile Ile Thr Phe Glu Ser Phe Lys Glu Asn Leu Lys  
115 120 125

Asp Phe Leu Leu Val Ile Pro Phe Asp Cys Trp Glu Pro Val Gln Glu  
130 135 140

<210> 19  
<211> 501  
<212> DNA  
<213> Homo sapiens

<400> 19  
atgaaatata caagttatat cttggctttt cagctctgca tcgttttggg ttctcttggc  
60

tgttactgcc aggaccata tgtaaaagaa gcagaaaacc ttaagaaata ttttaatgca  
120

ggtcattcag atgtagcgga taatggaact cttttotttag gcattttgaa gaattggaaa  
180

gaggagagtg acagaaaaat aatgcagagc caaattgtct ccttttaactt caaacttttt  
240

aaaaacttta aagatgacca gagcatocaa aagagtgtgg agaccatcaa ggaagacatg  
300

aatgtcaagt ttttcaatag caacaaaaag aaacgagatg acttcgaaaa gctgactaat  
360

tattcggtaa ctgacttgaa tgtccaacgc aaagcaatac atgaactcat ccaagtgatg  
420

gctgaactgt cgccagcagc taaaacaggg aagcgaaaaa ggagtcagat gctgtttcga  
480

ggtcgaagag catcccagta a  
501

<210> 20  
<211> 166

<212> PRT  
 <213> Homo sapiens

<400> 20

Met Lys Tyr Thr Ser Tyr Ile Leu Ala Phe Gln Leu Cys Ile Val Leu  
 1 5 10 15

Gly Ser Leu Gly Cys Tyr Cys Gln Asp Pro Tyr Val Lys Glu Ala Glu  
 20 25 30

Asn Leu Lys Lys Tyr Phe Asn Ala Gly His Ser Asp Val Ala Asp Asn  
 35 40 45

Gly Thr Leu Phe Leu Gly Ile Leu Lys Asn Trp Lys Glu Glu Ser Asp  
 50 55 60

Arg Lys Ile Met Gln Ser Gln Ile Val Ser Phe Tyr Phe Lys Leu Phe  
 65 70 75 80

Lys Asn Phe Lys Asp Asp Gln Ser Ile Gln Lys Ser Val Glu Thr Ile  
 85 90 95

Lys Glu Asp Met Asn Val Lys Phe Phe Asn Ser Asn Lys Lys Lys Arg  
 100 105 110

Asp Asp Phe Glu Lys Leu Thr Asn Tyr Ser Val Thr Asp Leu Asn Val  
 115 120 125

Gln Arg Lys Ala Ile His Glu Leu Ile Gln Val Met Ala Glu Leu Ser  
 130 135 140

Pro Ala Ala Lys Thr Gly Lys Arg Lys Arg Ser Gln Met Leu Phe Arg  
 145 150 155 160

Gly Arg Arg Ala Ser Gln  
 165

<210> 21

<211> 1352

<212> DNA

<213> Homo sapiens

<400> 21

ctgggacagt gaatogacaa tgccgtcttc tgtctcgtgg ggcctctcc tgcctggcagg  
 60

cctgtgtctgc ctggtccctg tctccctggc tgaggatccc caggagatg ctgccacagaa  
 120

gacagatata tcccaccatg atcaggatca cccaaccttc aacaagatca cccccaacct  
 180

ggctgagttc gccttcagcc tataccgcc gctggcacac cagtccaaca gcaccaatat  
 240

cttctctctcc ccagttagca tcgctacagc ctttgcaatg ctctccctgg ggaccaaggc  
 300

tgacactcac gatgaaatcc tggaggccct gaatttcaac ctacaggaga ttccggaggc  
 360

tcagatccat gaaggcttcc aggaactcct cagtaccctc aaccagccag acagccagct  
420

ccagctgacc accggcaatg gcctgttccct cagcgagggc ctgaagctag tggataagtt  
480

tttggaggat gttaaaaagt tgtaccactc agaagccttc actgtcaact toggggacac  
540

cgaagaggcc aagaacaga tcaacgatta cgtggagaag ggtactcaag ggaaaattgt  
600

ggatttggtc aaggagcttg acagagacac agtttttgtc ctggtgaatt acatcttctt  
660

taaaggcaaa tgggagagac cctttgaagt caaggacacc gaggaagagg acttccacgt  
720

ggaccagtg accacogtga aggtgcctat gatgaagcgt ttaggcattgt ttaacatcca  
780

gcactgtaag aagctgtcca gctgggtgct gctgatgaaa tacctgggca atgccaccgc  
840

catcttcttc ctgcctgatg aggggaaact acagcactcg gaaaatgaac tcaccacaga  
900

tatcatcacc aagtctctgg aaaatgaaga cagaaggctc gccagcttac atttaccocaa  
960

actgtccatt actggaacct atgatctgaa gagcgtcctg ggtcaactgg gcatcaactaa  
1020

ggtcttcagc aatggggctg acctctccgg ggtcacagag gaggcacccc tgaagctctc  
1080

caaggccgtg cataaggctg tgctgacct cgcagagaaa gggactgaag ctgctggggc  
1140

catgttttta gagccatac ccatgtctat cccccccgag gtcaagttca acaaacctt  
1200

tgtcttctta atgattgaac aaaataccaa gtctccctc ttcattggaa aagtgtgaa  
1260

tcccacccaa aaataactgc ctctcgtcc tcaacccctc cctccatcc ctggccccct  
1320

cctgggatga cattaagaa gggttgagct gg  
1352

<210> 22  
<211> 418  
<212> PRT  
<213> Homo sapiens

<400> 22  
Met Pro Ser Ser Val Ser Trp Gly Ile Leu Leu Leu Ala Gly Leu Cys  
1 5 10 15  
Cys Leu Val Pro Val Ser Leu Ala Glu Asp Pro Gln Gly Asp Ala Ala

20

25

30

Gln Lys Thr Asp Thr Ser His His Asp Gln Asp His Pro Thr Phe Asn  
35 40 45

Lys Ile Thr Pro Asn Leu Ala Glu Phe Ala Phe Ser Leu Tyr Arg Gln  
50 55 60

Leu Ala His Gln Ser Asn Ser Thr Asn Ile Phe Phe Ser Pro Val Ser  
65 70 75 80

Ile Ala Thr Ala Phe Ala Met Leu Ser Leu Gly Thr Lys Ala Asp Thr  
85 90 95

His Asp Glu Ile Leu Glu Gly Leu Asn Phe Asn Leu Thr Glu Ile Pro  
100 105 110

Glu Ala Gln Ile His Glu Gly Phe Gln Glu Leu Leu Arg Thr Leu Asn  
115 120 125

Gln Pro Asp Ser Gln Leu Gln Leu Thr Thr Gly Asn Gly Leu Phe Leu  
130 135 140

Ser Glu Gly Leu Lys Leu Val Asp Lys Phe Leu Glu Asp Val Lys Lys  
145 150 155 160

Leu Tyr His Ser Glu Ala Phe Thr Val Asn Phe Gly Asp Thr Glu Glu  
165 170 175

Ala Lys Lys Gln Ile Asn Asp Tyr Val Glu Lys Gly Thr Gln Gly Lys  
180 185 190

Ile Val Asp Leu Val Lys Glu Leu Asp Arg Asp Thr Val Phe Ala Leu  
195 200 205

Val Asn Tyr Ile Phe Phe Lys Gly Lys Trp Glu Arg Pro Phe Glu Val  
210 215 220

Lys Asp Thr Glu Glu Glu Asp Phe His Val Asp Gln Val Thr Thr Val  
225 230 235 240

Lys Val Pro Met Met Lys Arg Leu Gly Met Phe Asn Ile Gln His Cys  
245 250 255

Lys Lys Leu Ser Ser Trp Val Leu Leu Met Lys Tyr Leu Gly Asn Ala  
260 265 270

Thr Ala Ile Phe Phe Leu Pro Asp Glu Gly Lys Leu Gln His Leu Glu  
275 280 285

Asn Glu Leu Thr His Asp Ile Ile Thr Lys Phe Leu Glu Asn Glu Asp  
290 295 300

Arg Arg Ser Ala Ser Leu His Leu Pro Lys Leu Ser Ile Thr Gly Thr  
305 310 315 320

Tyr Asp Leu Lys Ser Val Leu Gly Gln Leu Gly Ile Thr Lys Val Phe  
325 330 335

Ser Asn Gly Ala Asp Leu Ser Gly Val Thr Glu Glu Ala Pro Leu Lys  
340 345 350

Leu Ser Lys Ala Val His Lys Ala Val Leu Thr Ile Asp Glu Lys Gly  
 355 360 365

Thr Glu Ala Ala Gly Ala Met Phe Leu Glu Ala Ile Pro Met Ser Ile  
 370 375 380

Pro Pro Glu Val Lys Phe Asn Lys Pro Phe Val Phe Leu Met Ile Glu  
 385 390 395 400

Gln Asn Thr Lys Ser Pro Leu Phe Met Gly Lys Val Val Asn Pro Thr  
 405 410 415

Gln Lys

<210> 23  
 <211> 2004  
 <212> DNA  
 <213> Homo sapiens

<400> 23  
 gctaaccctag tgcctatagc taaggcaggt acctgcaccc ttgtttttgt ttagtggatc  
 60

ctctatcctt cagagactct ggaacccctg tggctctctc ttcacttaac gacctgagg  
 120

ggatggaggt ttcaagtcct tccagagagg aatgtcccaa gcctttgagt agggtaagca  
 180

tcattgcttg cagcctcaca ggcttgcttc tacttcaggc agtgtctgg gcactcagg  
 240

ccgccccctg catccctaaa agcttcggct acagctcggg ggtgtgtgtc tgcaatgcca  
 300

catactgtga ctcccttgac ccccgacct ttctgcacct tggtaacctc agccgctatg  
 360

agagtacacg cagtgggcga cggatggagc tgagtattgg gcccatocag gctaatacaca  
 420

cgggcacagg cctgctactg acctgcagc cagaacagaa gttcoagaaa gtgaagggat  
 480

ttggaggggc catgacagat gctgctgtc tcaacatcct tgcctgtca cccctgcc  
 540

aaaatttgct acttaaatcg tactctctg aagaaggaat cggatataac atcatccggg  
 600

taccatggc cagctgtgac ttctccatcc gcacctacac ctatgcagac accctgatg  
 660

attccagtt gcacaacttc agcctccag aggaagatac caagctcaag ataccctga  
 720

ttaccgagc cctgcagttg gccagcgtc cgttttcaat ccttgccagc cctgggacat  
 780

" caccacttg gctcaagacc aatggagcgg tgaatgggaa ggggtcaacc aayyyacayc  
840

ccggagacat ctaccaccag acctgggcc aatactttgt gaagtctctg gatgcctatg  
900

ctgagcacia gttacagttc tgggcagtga cagctgaaaa tgagccttct gctgggctgt  
960

tgagtggata cccttccag tgcttgggtc tcacctga acatcagcga gacttcattg  
1020

cccgtgacct aggtctctacc ctgcacaaca gtactcacca caatgtccgc ctactcatgc  
1080

tggatgacca acgcttctgt ctgcccact gggcaaaggt ggtactgaca gaccagaag  
1140

cagctaaata tgttcatggc attgctgtac attggtacct ggactttctg gctccagcca  
1200

aagccacct aggggagaca caccgctgt tccccaacac catgctcttt gcctcagagg  
1260

cctgtgtggg ctccaagttc tgggagcaga gtgtgcggct aggtctctgg gatcgaggga  
1320

tgcagtacag ccacagcacc atcacgaacc tctgtacca tgtggtcggc tggaccgact  
1380

ggaaccttc cctgaacccc gaaggaggac ccaattgggt gcgtaacttt gtcgacagtc  
1440

ccatcattgt agacatcacc aaggacacgt tttaaaaaa gccatgttc taccacctg  
1500

gccacttcag caagtctatt cctgagggct ccagagagt ggggctggtt gccagtcaga  
1560

agaacgacct ggacgcagtg gcactgatgc atcccgatgg ctctgctgtt gtggtcgtgc  
1620

taaacgctc ctctaaggat gtgcctctta ccatcaagga tctgctgtg ggcttctgtg  
1680

agacaatctc acctggtac tcattcaca cctacctgtg gcatcgccag tgatggagca  
1740

gatactcaag gaggcactgg gctcagcctg ggcattaaag ggacagagtc agctcacag  
1800

ctgtctgtga ctaaaggagg cacagcaggg ccagtgtgag ctacagcga cgtaagccca  
1860

ggggcaatgg tttgggtgac tcactttccc ctctaggttg tgccagggc tggaggcccc  
1920

tagaaaaaga tcagtaagcc ccagtgtccc cccagcccc atgcttatgt gaacatgcgc  
1980

tggtgtgctgc ttgctttgga aact  
2004

<210> 24  
<211> 536  
<212> PRT  
<213> Homo sapiens

<400> 24  
Met Glu Phe Ser Ser Pro Ser Arg Glu Glu Cys Pro Lys Pro Leu Ser  
1 5 10 15  
Arg Val Ser Ile Met Ala Gly Ser Leu Thr Gly Leu Leu Leu Leu Gln  
20 25 30  
Ala Val Ser Trp Ala Ser Gly Ala Arg Pro Cys Ile Pro Lys Ser Phe  
35 40 45  
Gly Tyr Ser Ser Val Val Cys Val Cys Asn Ala Thr Tyr Cys Asp Ser  
50 55 60  
Phe Asp Pro Pro Thr Phe Pro Ala Leu Gly Thr Phe Ser Arg Tyr Glu  
65 70 75 80  
Ser Thr Arg Ser Gly Arg Arg Met Glu Leu Ser Met Gly Pro Ile Gln  
85 90 95  
Ala Asn His Thr Gly Thr Gly Leu Leu Leu Thr Leu Gln Pro Glu Gln  
100 105 110  
Lys Phe Gln Lys Val Lys Gly Phe Gly Gly Ala Met Thr Asp Ala Ala  
115 120 125  
Ala Leu Asn Ile Leu Ala Leu Ser Pro Pro Ala Gln Asn Leu Leu Leu  
130 135 140  
Lys Ser Tyr Phe Ser Glu Glu Gly Ile Gly Tyr Asn Ile Ile Arg Val  
145 150 155 160  
Pro Met Ala Ser Cys Asp Phe Ser Ile Arg Thr Tyr Thr Tyr Ala Asp  
165 170 175  
Thr Pro Asp Asp Phe Gln Leu His Asn Phe Ser Leu Pro Glu Glu Asp  
180 185 190  
Thr Lys Leu Lys Ile Pro Leu Ile His Arg Ala Leu Gln Leu Ala Gln  
195 200 205  
Arg Pro Val Ser Leu Leu Ala Ser Pro Trp Thr Ser Pro Thr Trp Leu  
210 215 220  
Lys Thr Asn Gly Ala Val Asn Gly Lys Gly Ser Leu Lys Gly Gln Pro  
225 230 235 240  
Gly Asp Ile Tyr His Gln Thr Trp Ala Arg Tyr Phe Val Lys Phe Leu  
245 250 255  
Asp Ala Tyr Ala Glu His Lys Leu Gln Phe Trp Ala Val Thr Ala Glu  
260 265 270  
Asn Glu Pro Ser Ala Gly Leu Leu Ser Gly Tyr Pro Phe Gln Cys Leu

275

280

285

Gly Phe Thr Pro Glu His Gln Arg Asp Phe Ile Ala Arg Asp Leu Gly  
 290 295 300  
 Pro Thr Leu Ala Asn Ser Thr His His Asn Val Arg Leu Leu Met Leu  
 305 310 315 320  
 Asp Asp Gln Arg Leu Leu Leu Pro His Trp Ala Lys Val Val Leu Thr  
 325 330 335  
 Asp Pro Glu Ala Ala Lys Tyr Val His Gly Ile Ala Val His Trp Tyr  
 340 345 350  
 Leu Asp Phe Leu Ala Pro Ala Lys Ala Thr Leu Gly Glu Thr His Arg  
 355 360 365  
 Leu Phe Pro Asn Thr Met Leu Phe Ala Ser Glu Ala Cys Val Gly Ser  
 370 375 380  
 Lys Phe Trp Glu Gln Ser Val Arg Leu Gly Ser Trp Asp Arg Gly Met  
 385 390 395 400  
 Gln Tyr Ser His Ser Ile Ile Thr Asn Leu Leu Tyr His Val Val Gly  
 405 410 415  
 Trp Thr Asp Trp Asn Leu Ala Leu Asn Pro Glu Gly Gly Pro Asn Trp  
 420 425 430  
 Val Arg Asn Phe Val Asp Ser Pro Ile Ile Val Asp Ile Thr Lys Asp  
 435 440 445  
 Thr Phe Tyr Lys Gln Pro Met Phe Tyr His Leu Gly His Phe Ser Lys  
 450 455 460  
 Phe Ile Pro Glu Gly Ser Gln Arg Val Gly Leu Val Ala Ser Gln Lys  
 465 470 475 480  
 Asn Asp Leu Asp Ala Val Ala Leu Met His Pro Asp Gly Ser Ala Val  
 485 490 495  
 Val Val Val Leu Asn Arg Ser Ser Lys Asp Val Pro Leu Thr Ile Lys  
 500 505 510  
 Asp Pro Ala Val Gly Phe Leu Glu Thr Ile Ser Pro Gly Tyr Ser Ile  
 515 520 525  
 His Thr Tyr Leu Trp His Arg Gln  
 530 535  
 <210> 25  
 <211> 1726  
 <212> DNA  
 <213> Homo sapiens  
 <400> 25  
 atggatgcaa tgaagagagg gctctgctgt gtgctgctgt tgtgtggagc agtcttcgtt  
 60  
 tcgcccagcc aggaatccca tgcccgaattc agaagaggag ccagatctta ccaagtgatc  
 120



tgcagagatg aaaaaacgca gatgatatac cagcaacatc agtcattggt gcgcctctgt  
180

ctcagaagca accgggtgga atattgctgg tgcaacagtg gcagggcaca gtgccactca  
240

gtgctgtca aaagtgcag cgagccaagg tgtttcaacg ggggcacctg ccagcaggcc  
300

ctgtacttct cagatttctg gtgccagtgc cccgaaggat ttgctgggaa gtgctgtgaa  
360

atagatacca gggccactg ctacaggagc cagggcacat gctacagggg cacgtggagc  
420

acagcggaga gtggcgccga gtgcaccaac tggaacagca gcgcgttgcc ccagaagccc  
480

tacagcgggc ggaggccaga cgcctcagg ctgggctctg ggaaccacaa ctactgcaga  
540

aaaccagatc gagactcaaa gccctggtgc tacgtcttta aggcggggaa gtacagctca  
600

gagttctgca gcaccctgc ctgctctgag ggaacagtg actgctaact tgggaatggg  
660

tcagcctacc gtggcagca cagcctcaco gactcgggtg cctcctgcct ccctggaat  
720

tccatgatcc tgataggcaa ggtttacaca gcacagaacc ccagtgccca ggcactgggc  
780

ctgggcaaac ataattactg ccggaatcct gatggggatg ccaagcctg gtgccactg  
840

ctgaagaacc gcaggctgac gtgggagtac tgtgatgtgc cctcctgctc cacctcgggc  
900

ctgagacagt acagccagcc tcagtttcgc atcaaaggag ggctcttcgc cgacatcgcc  
960

tcccaccctt ggcaggctgc catctttgcc aagcacagga ggtcgccggg agagcggttc  
1020

ctgtcgggg gcatactcat cagctcctgc tggattctct ctgcgccca ctgcttcag  
1080

gagaggtttc cgcgccacca cctgacgggt atcttgggca gaacatacag ggtggtccct  
1140

ggcgaggagg agcagaaatt tgaagtogaa aaatacattg tccataagga attcgatgat  
1200

gacacttaag acaatgacat tgcgctgctg cagctgaaat cggattcgtc ccgctgtgcc  
1260

caggagagca gcgtggtcgg cactgtgtgc cttccccggg cggacctgca gctgccggac  
1320

Tggacggagt gtagctctcd cggctacggc aagcatgagg ccttgtctcc ttctattcg  
1380

gagcggctga aggaggtcga tgtcagactg tacccatcca gccgctgcac atcacaacat  
1440

ttacttaaca gaacagtcac cgacaacatg ctgtgtgctg gagacactcg gagcggcggg  
1500

ccccaggcaa acttgcaaga cgcctgccag ggcgattcgg gagccccct ggtgtgtctg  
1560

aacgatggcc goatgacttt ggtgggcac atcagctggg gcctgggctg tggacagaag  
1620

gatgtccogg gtgtgtacac caaggttacc aactacctag actggattcg tgacaacatg  
1680

cgaccgtgac caggaacacc cgactcctca aaagcaaatg agatcc  
1726

<210> 26

<211> 562

<212> PRT

<213> Homo sapiens

<400> 26

Met Asp Ala Met Lys Arg Gly Leu Cys Cys Val Leu Leu Leu Cys Gly  
1 5 10 15

Ala Val Phe Val Ser Pro Ser Gln Glu Ile His Ala Arg Phe Arg Arg  
20 25 30

Gly Ala Arg Ser Tyr Gln Val Ile Cys Arg Asp Glu Lys Thr Gln Met  
35 40 45

Ile Tyr Gln Gln His Gln Ser Trp Leu Arg Pro Val Leu Arg Ser Asn  
50 55 60

Arg Val Glu Tyr Cys Trp Cys Asn Ser Gly Arg Ala Gln Cys His Ser  
65 70 75 80

Val Pro Val Lys Ser Cys Ser Glu Pro Arg Cys Phe Asn Gly Gly Thr  
85 90 95

Cys Gln Gln Ala Leu Tyr Phe Ser Asp Phe Val Cys Gln Cys Pro Glu  
100 105 110

Gly Phe Ala Gly Lys Cys Cys Glu Ile Asp Thr Arg Ala Thr Cys Tyr  
115 120 125

Glu Asp Gln Gly Ile Ser Tyr Arg Gly Thr Trp Ser Thr Ala Glu Ser  
130 135 140

Gly Ala Glu Cys Thr Asn Trp Asn Ser Ser Ala Leu Ala Gln Lys Pro  
145 150 155 160

Tyr Ser Gly Arg Arg Pro Asp Ala Ile Arg Leu Gly Leu Gly Asn His  
165 170 175

Asn Tyr Cys Arg Asn Pro Asp Arg Asp Ser Lys Pro Trp Cys Tyr Val

180										185										190																																		
Phe	Lys	Ala	Gly	Lys	Tyr	Ser	Ser	Glu	Phe	Cys	Ser	Thr	Pro	Ala	Cys																																							
195										200										205																																		
Ser	Glu	Gly	Asn	Ser	Asp	Cys	Tyr	Phe	Gly	Asn	Gly	Ser	Ala	Tyr	Arg																																							
210										215										220																																		
Gly	Thr	His	Ser	Leu	Thr	Glu	Ser	Gly	Ala	Ser	Cys	Leu	Pro	Trp	Asn																																							
225										230										235																																		
Ser	Met	Ile	Leu	Ile	Gly	Lys	Val	Tyr	Thr	Ala	Gln	Asn	Pro	Ser	Ala																																							
245										250										255																																		
Gln	Ala	Leu	Gly	Leu	Gly	Lys	His	Asn	Tyr	Cys	Arg	Asn	Pro	Asp	Gly																																							
260										265										270																																		
Asp	Ala	Lys	Pro	Trp	Cys	His	Val	Leu	Lys	Asn	Arg	Arg	Leu	Thr	Trp																																							
275										280										285																																		
Glu	Tyr	Cys	Asp	Val	Pro	Ser	Cys	Ser	Thr	Cys	Gly	Leu	Arg	Gln	Tyr																																							
290										295										300																																		
Ser	Gln	Pro	Gln	Phe	Arg	Ile	Lys	Gly	Gly	Leu	Phe	Ala	Asp	Ile	Ala																																							
305										310										315																																		
Ser	His	Pro	Trp	Gln	Ala	Ala	Ile	Phe	Ala	Lys	His	Arg	Arg	Ser	Pro																																							
325										330										335																																		
Gly	Glu	Arg	Phe	Leu	Cys	Gly	Gly	Ile	Leu	Ile	Ser	Ser	Cys	Trp	Ile																																							
340										345										350																																		
Leu	Ser	Ala	Ala	His	Cys	Phe	Gln	Glu	Arg	Phe	Pro	Pro	His	His	Leu																																							
355										360										365																																		
Thr	Val	Ile	Leu	Gly	Arg	Thr	Tyr	Arg	Val	Val	Pro	Gly	Glu	Glu	Glu																																							
370										375										380																																		
Gln	Lys	Phe	Glu	Val	Glu	Lys	Tyr	Ile	Val	His	Lys	Glu	Phe	Asp	Asp																																							
385										390										395																																		
Asp	Thr	Tyr	Asp	Asn	Asp	Ile	Ala	Leu	Leu	Gln	Leu	Lys	Ser	Asp	Ser																																							
405										410										415																																		
Ser	Arg	Cys	Ala	Gln	Glu	Ser	Ser	Val	Val	Arg	Thr	Val	Cys	Leu	Pro																																							
420										425										430																																		
Pro	Ala	Asp	Leu	Gln	Leu	Pro	Asp	Trp	Thr	Glu	Cys	Glu	Leu	Ser	Gly																																							
435										440										445																																		
Tyr	Gly	Lys	His	Glu	Ala	Leu	Ser	Pro	Phe	Tyr	Ser	Glu	Arg	Leu	Lys																																							
450										455										460																																		
Glu	Ala	His	Val	Arg	Leu	Tyr	Pro	Ser	Ser	Arg	Cys	Thr	Ser	Gln	His																																							
465										470										475																																		
Leu	Leu	Asn	Arg	Thr	Val	Thr	Asp	Asn	Met	Leu	Cys	Ala	Gly	Asp	Thr																																							
485										490										495																																		
Arg	Ser	Gly	Gly	Pro	Gln	Ala	Asn	Leu	His	Asp	Ala	Cys	Gln	Gly	Asp																																							
500										505										510																																		

Ser Gly Gly Pro Leu Val Cys Leu Asn Asp Gly Arg Met Thr Leu Val  
 515 520 525

Gly Ile Ile Ser Trp Gly Leu Gly Cys Gly Gln Lys Asp Val Pro Gly  
 530 535 540

Val Tyr Thr Lys Val Thr Asn Tyr Leu Asp Trp Ile Arg Asp Asn Met  
 545 550 555 560

Arg Pro

<210> 27  
 <211> 825  
 <212> DNA  
 <213> Homo sapiens

<400> 27  
 atcactctct ttaatcacta ctcacattaa cctcaactcc tgccacaatg tacaggatgc  
 60

aactcctgtc ttgcattgca ctaattcttg cacttgtcac aaacagtgc cctacttcaa  
 120

gttcagacaaa gaaaacaaag aaaacacagc tacaactgga gcatttactg ctggatttac  
 180

agatgatttt gaatggaatt aataattaca agaatcccaa actcaccagg atgctcacat  
 240

ttaagtitta catgccaag aaggccacag aactgaaaca gcttcagtgt ctagaagaag  
 300

aactcaaacc tctggaggaa gtgctgaatt tagctcaag caaaaacttt cacttaagac  
 360

ccagggaactt aatcagcaat atcaacgtaa tagttctgga actaaaggga tctgaaacaa  
 420

cattcatgtg tgaatatgca gatgagacag caaccattgt agaatttctg aacagatgga  
 480

ttacottttg tcaaagcatc atctcaacac taacttgata attaagtgt tccacttaa  
 540

aacatatacg gcctcttatt tatttattta aatattttaa ttttatattt attgttgaa  
 600

gtatgggtgc tacctattgt aactattatt cttaacttta aaactataaa tatggatctt  
 660

ttatgattct ttttgtaagc cctaggggct ctaaaatggt ttaccttatt tatcccaaaa  
 720

atatttatta ttatgttgaa tgttaaatat agtatctatg tagattgggt agtaaaacta  
 780

tttaataaat ttgataaata taaaaaaaa aaacaaaaaa aaaaa  
 825

<210> 28

<211> 156  
 <212> PRT  
 <213> Homo sapiens

<400> 28  
 Met Tyr Arg Met Gln Leu Leu Ser Cys Ile Ala Leu Ile Leu Ala Leu  
 1 5 10 15  
 Val Thr Asn Ser Ala Pro Thr Ser Ser Ser Thr Lys Lys Thr Lys Lys  
 20 25 30  
 Thr Gln Leu Gln Leu Glu His Leu Leu Leu Asp Leu Gln Met Ile Leu  
 35 40 45  
 Asn Gly Ile Asn Asn Tyr Lys Lys Asn Pro Lys Leu Thr Arg Met Leu Thr  
 50 55 60  
 Phe Lys Phe Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys Gln Leu Gln  
 65 70 75 80  
 Cys Leu Glu Glu Glu Leu Lys Pro Leu Glu Glu Val Leu Asn Leu Ala  
 85 90 95  
 Gln Ser Lys Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile  
 100 105 110  
 Asn Val Ile Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys  
 115 120 125  
 Glu Tyr Ala Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp  
 130 135 140  
 Ile Thr Phe Cys Gln Ser Ile Ile Ser Thr Leu Thr  
 145 150 155

<210> 29  
 <211> 7931  
 <212> DNA  
 <213> Homo sapiens

<400> 29  
 atgcaaatag agctctccac ctgcttcttt ctgtgccttt tgcgattctg ctttagtgcc  
 60  
 accagaagat actacctggg tgcagtgga ctgtcatggg actatatgca aagtgatctc  
 120  
 ggtgagctgc ctgtggacgc aagatttcct cctagagtcg caaatcttt tccattcaac  
 180  
 acctcagtcg tgtacaaaa gactctgttt gtagaattca cggatcacct tttcaacatc  
 240  
 gctaagccaa ggccaccctg gatgggtctg ctaggctcta ccatccaggc tgaggtttat  
 300  
 gatacagtg tcatctact taagaacatg gcttccatc ctgtcagctc tcatgctgtt  
 360  
 ggtgtatcct actggaaagc ttctgaggga gctgaatatg atgatcagac cagtcaaagg  
 420

gagaaagaag atgataaagt cttccctggt ggaagccata catatgtctg gaaggtcctg  
480

aaagagaatg gtccaatggc ctctgacca ctgtgcotta cctactcata tctttctcat  
540

gtggacctgg taaaagactt gaattcaggc ctcatggag ccctactagt atgtagagaa  
600

gggagtctgg ccaaggaaaa gacacagacc ttgcacaaat ttatactact ttttgctgta  
660

tttgatgaag ggaaaagtgt gcaactcagaa acaaagaact ccttgatgca ggatagggat  
720

gctgcatctg ctogggcctg gcctaaaatg cacacagtca atggttatgt aaacaggctt  
780

ctgccaggtc tgattggatg ccacaggaaa tcagtctatt ggcatgtgat tggaatgggc  
840

accatcctg aagtgcactc aatattcctc gaaggtcaca catttttgt gaggaacct  
900

cgccaggcgt ccttggaat ctgccaaata actttcotta ctgctcaaac actcttgatg  
960

gacottggac agtttctact gttttgcat atctcttccc accaactga tggcatggaa  
1020

gcttatgtca aagtagacag ctgtccagag gaacccaac tacgaatgaa aaataatgaa  
1080

gaagcggaag actatgatga tgatcttact gattctgaaa tggatgtggt caggtttgat  
1140

gatgacaact ctcttctctt tatccaaatt cgtcagttg ccaagaagca tcctaaaact  
1200

tgggtacatt acattgtgc tgaagaggag gactgggact atgctccctt agtctcgc  
1260

cccgatgaca gaagttataa aagtcaatat ttgaacaatg gcctcagcg gattggtagg  
1320

aagtacaaaa aagtcgatt tatggcctac acagatgaaa cctttaagac tcgtgaagct  
1380

attcagcatg aatcaggaat cttgggacct ttactttatg gggaagtgtg agacacactg  
1440

ttgattatat ttaagaatca agcaagcaga ccatataaca tctaccctca cggaatcact  
1500

gatgtccgtc ctttgtatto aaggagatta ccaaaagggtg taaaacattt gaaggatttt  
1560

ccaattctgc caggagaaat attcaaatat aaatggacag tgactgtaga agatgggcca  
1620

actaaatcag atccctcggtg cctgaccgcg tattactcta gtttcgttaa tctggayaya  
1680

gattctagctt caggactcat tggccctctc ctcatctgct acaagaatc thtagatcaa  
1740

agaggaaacc agataatgtc agacaagagg aatgtcatcc tgttttctgt atttgatgag  
1800

aaccgaagct ggtacctcac agagaatata caacgcttcc tcccacatcc agctggagtg  
1860

cagcttgagg atccagagtt ccaagcctcc aacatcatgc acagcatcaa tggctatggt  
1920

tttgatagtt tgcagttgtc agtttgtttg catgaggtgg catactggta cattctaagc  
1980

attggagcac agactgactt cttttctgtc ttcttctctg gatatacctt caaacacaaa  
2040

atggtctatg aagacacact caccctattc ccattctcag gagaactgt cttcatgtcg  
2100

atggaaaacc caggctctatg gattotgggg tgccacaact cagaatttcg gaacagaggg  
2160

atgaccgcct tactgaaggt ttctagttgt gacaagaaca ctggtgatta ttaagaggac  
2220

agttatgaag atatttcagc atacttgctg agtaaaaaa atgcattga accaagaagc  
2280

ttctcccaga attcaagaca ccgtagcact agggaaaagc aatttaagtc caccacaatt  
2340

ccagaaaatg acatagagaa gactgaccc tggtttgac acagaacacc tatgcctaaa  
2400

atacaaaatg tctcctctag tgatttggtg atgctcttgc gacagagtcc tactccacat  
2460

gggctatcct tatctgatct ccaagaagcc aaatatgaga ctttttctga ttagcatca  
2520

cctggagcaa tagacagtaa taacagcctg tctgaaatga cacacttcag gccacagctc  
2580

catcacagtg gggacatggt atttaccctt gagtcaggcc tccaattaag attaaatgag  
2640

aaactgggga caactgcagc aacagagttg aagaaacttg atttcaaagt ttctagtaca  
2700

tcaaataatc tgatttcaac aattccatca gacaatttgg cagcaggtag tgataataca  
2760

agttccttag gacccccaaag tatgccagtt cattatgata gtcaattaga taccactcta  
2820

tttggcaaaa agfcaTCTcc ccttaactgag tctggtggac ctctgagctt gagtgaagaa  
2880

aataatgatt caaagttgtt agaatcaggt ttaatgaata gccaaagaaag ttcattggga  
2940

aaaaatgtat cgtcaacaga gagtggtagg ttatttaaag ggaaaagagc toatggacct  
3000

gctttgttga ctaaagataa tgccttattc aaagtttagca tctctttgtt aaagacaaa  
3060

aaaacttcca ataattcagc aactaataga aagactcaca ttgatggccc atcattatta  
3120

attgagaata gtccatcagt ctggcaaat atattagaaa gtgacactga gtttaaaaa  
3180

gtgacacctt tgattcatga cagaatgctt atggacaaaa atgtacagc tttgaggcta  
3240

aatcatatgt caaataaaac tacttcatca aaaacatgg aaatggtcca acagaaaaaa  
3300

gagggcccca ttccaccaga tgcacaaaat ccagatatgt. cgttctttaa gatgctatcc  
3360

ttgccagaat cagcaagggtg gatacaaagg actcatggaa agaactctct gaactctggg  
3420

caaggcccca gtccaaagca attagtatcc ttaggaccag aaaaatctgt ggaaggtcag  
3480

aatttcttgt ctgagaaaaa caaagtggta gtagaaagg gtgaatttac aaaggacgta  
3540

ggactcaaag agatggtttt tccaagcagc agaaacctat ttcttactaa cttggataat  
3600

ttacatgaaa ataatacaca caatcaagaa aaaaaaattc aggaagaaat agaaaagaag  
3660

gaaacattaa tccaagagaa tgtagttttg cctcagatac atacagtgc tggcactaag  
3720

aatttcatga agaacctttt cttaactgagc actaggcaaa atgtagaagg ttcattatgc  
3780

ggggcatatg ctccagtact tcaagatttt aggtcattaa atgattcaac aaatagaaca  
3840

aagaaacaca cagctcattt ctcaaaaaaa ggggaggaag aaacttga aggccttgga  
3900

aatcaaacca agcaaattgt agagaaatat gcatgcacca caaggatata tctaataca  
3960

agccagcaga attttgtcac gcaacgtagt aagagagctt tgaacaatt cagactccca  
4020



ctagaagaaa cagaacttga aaaaaggata attgtggatg acacctcaac ccagtcggtcc  
4080

aaaaacatga aacatttgac ccgagcacc ctcacacaga tagactacaa tgagaaggag  
4140

aaaggggcca ttactcagtc tcccttatca gattgcctta cgaggagtca tagcatccct  
4200

caagcaata gatctccatt acccattgca aaggtatcat catttccatc tattagacct  
4260

atatatctga ccagggtcct attccaagac aactcttctc atcttcacgc agcatcttat  
4320

agaaagaaag attctggggt ccaagaaagc agtcatttct tacaaggagc caaaaaaat  
4380

aacctttctt tagccattct aaccttgag atgactggtg atcaaagaga ggttggtcc  
4440

ctggggacaa gtgccacaaa ttcagtcaca tacaagaaag ttgagaacac tgttctccc  
4500

aaaccagact tgccaaaaac atctggcaaa gttgaattgc ttccaaaagt tcacatttat  
4560

cagaaggacc tattccctac ggaaactagc aatgggtctc ctggccatct ggatctcgtg  
4620

gaagggagcc ttcttcaggc aacagagggg gcgattaagt ggaatgaagc aaacagacct  
4680

ggaaaagttc ctttctgag agtagcaaca gaaagctctg caaagactcc ctccaagcta  
4740

ttggatctc ttgcttgga taaccactat ggtactcaga taccaaaaga agagtggaa  
4800

tccaagaga agtcaccaga aaaaacagct tttaagaaaa aggataccat tttgtccctg  
4860

aacgcttggtg aaagcaatca tgcaatagca gcaataaatg agggacaaaa taagcccgaa  
4920

atagaagtca cctgggcaaa gcaaggtagg actgaaaggc tgtgctctca aaaccaccca  
4980

gtcttgaac gccatcaacg ggaaataact cgtactactc ttcagtcaga tcaagaggaa  
5040

attgactatg atgataccat atcagttgaa atgaagaagg aagattttga catttatgat  
5100

gaggatgaaa atcagagccc ccgcagcttt caaaagaaaa cgcgacacta ttttattgct  
5160

gcagtggaga ggctctggga ttatgggatg agtagctcc cacatgttct aagaaacagg  
5220

gctcagagtg gcagtgctcc tcagttcaag aaagttgttt tocaggaatt tactgaatgg  
5280

tcctttactc agcccttata ccgtggagaa ctaaatgaac atttgggaact cctggggcca  
5340

tatataagag cagaagtga agataatato atggtaactt tcagaaatca ggctctctgt  
5400

ccctattcct totattctag ccttatttct tatgaggaag atcagaggca aggagcagaa  
5460

cctagaaaaa actttgtcaa gctaatgaa accaaaaactt acttttgaa agtgcaacat  
5520

catatggcac ccaactaaga tgagtttgac tgcaaaagcct gggcttattt ctctgatgtt  
5580

gacotggaaa aagatgtgca ctcaggcctg attggacccc ttctggctg ccacactaac  
5640

acactgaacc ctgctcatgg gagacaagt acagtacagg aatttgctct gtttttcacc  
5700

atctttgatg agacaaaaag ctggtacttc actgaaata tggaaagaaa ctgcagggt  
5760

ccctgcaata tccagatgga agatcccact tttaaagaga attatcgctt ccctgcaatc  
5820

aatggctaca taatggatac actacctggc ttagtaatgg ctcaggatca aaggattcga  
5880

tggtatctgc tcagcatggg cagcaatgaa aacatccatt ctattcatct cagtggacat  
5940

gtgttccactg tacgaaaaaa agaggagtat aaaatggcac tgtacaatct ctatccagg  
6000

gtttttgaga cagtggaaat gttaccatcc aaagctggaa ttgggggggt ggaatgctt  
6060

attggcgagc atctacatgc tgggatgagc acacttttct tgggtgtacag caataagtgt  
6120

cagactcccc tgggaatggc ttctggacac attagagatt ttcagattac agcttcagga  
6180

caatatggac agtgggcccc aaagctggcc agacttcatt attccggatc aatcaatgcc  
6240

tggagcacca aggagccctt ttcttgatc aaggtggatc tgttgccacc aatgattatt  
6300

caoggoatca agaccaggg tgcccgctcag aagttctcca gctctacat ctctcagttt  
6360

atcatcatgt atagtottga tgggaagaag tggcagactt atcagggaaa ttccactgga  
6420

accttaattg tcttcttttg caatgtggat tcatctggga taaaacacaa tatttttaac  
6480

cctccaatta ttgctcgata catccgtttg caccocaactc attatagcat tgcgagcact  
6540

cttcgcatgg agttgatggg ctgtgattta aatagttgca gcattgccatt gggaaatggag  
6600

agtaaagcaa tatcagatgc acagattact gcttcattct actttaccaa tatgttttgc  
6660

acctgggtctc cttcaaaagc tcgacttcac ctccaagggg ggagtaatgc ctggagacct  
6720

caggtgaata atccaaaaga gtggctgcaa gtggacttcc agaagacaat gaaagtcaca  
6780

ggagtaacta ctcaggaggt aaaatctctg cttaccagca tgtatgtgaa ggagttcttc  
6840

atctccagca gtcaagatgg coactcagtg actctctttt ttcagaatgg caaagtaaa  
6900

gtttttcagg gaaatcaaga ctccctcaca cctgtggtga actctctaga cccaccgtta  
6960

ctgactcgtc accttogaat tcacccccag agttgggtgc accagattgc cctgaggatg  
7020

gaggttcttg gctgcgaggc acaggacctc tactgagggg gccactgca gcacctgca  
7080

ctgcctgcac ctctccctcc tcagctccag ggcagtgtcc ctccctggct tgcctctac  
7140

ctttgtgcta aatcctagca gacactgctc tgaagcctcc tgaattaact atcatcagtc  
7200

ctgcatttct ttggtggggg gccaggaggg tgcattcaat ttaacttaac tcttacctat  
7260

ttctgcagc tgcctccaga ttactccttc cttccaatat aactaggcaa aaagaagtga  
7320

ggagaaacct gcattgaaagc attcttccct gaaaagttag gcctctcaga gtcaccactt  
7380

ctctgttgt agaaaaacta tgtgatgaaa ctttgaaaaa gatatttatg atgttaacat  
7440

ttcagggtta gcttcatacg tttaaaataa aactctcagt tgtttattat cctgatcaag  
7500

catggaacaa agcatgtttc aggatcagat caatacaatc ttggagtc aaagcaaatc  
7560

atttgacaa tctgcaaaat ggagagaata caataactac tacagtaaag tctgtttctg  
7620

cttccttaca catagatata attatgttat ttagtcatta tgagggggcac attcttatct  
7680

ccaaaactag cattcttaaa ctgagaatta tagatggggt tcaagaatcc ctaagtcccc  
7740

tgaattata taaggcattc tgtataaatg caaatgtgca tttttctgac gagtgtccat  
7800

agatataaag ccatttggto ttaattctga ccaataaaaa aataagtcag gaggatgcaa  
7860

ttgttgaaag ctttgaaata aaataacaat gtcttcttga aatttgtgat ggccaagaaa  
7920

gaaaatgatg a  
7931

<210> 30  
<211> 2351  
<212> PRT  
<213> Homo sapiens

<400> 30  
Met Gln Ile Glu Leu Ser Thr Cys Phe Phe Leu Cys Leu Leu Arg Phe  
1 5 10 15  
Cys Phe Ser Ala Thr Arg Arg Tyr Tyr Leu Gly Ala Val Glu Leu Ser  
20 25 30  
Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg  
35 40 45  
Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val  
50 55 60  
Tyr Lys Lys Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile  
65 70 75 80  
Ala Lys Pro Arg Pro Pro Trp Met Gly Leu Leu Gly Pro Thr Ile Gln  
85 90 95  
Ala Glu Val Tyr Asp Thr Val Val Ile Thr Leu Lys Asn Met Ala Ser  
100 105 110  
His Pro Val Ser Leu His Ala Val Gly Val Ser Tyr Trp Lys Ala Ser  
115 120 125  
Glu Gly Ala Glu Tyr Asp Asp Gln Thr Ser Gln Arg Glu Lys Glu Asp  
130 135 140  
Asp Lys Val Phe Pro Gly Gly Ser His Thr Tyr Val Trp Gln Val Leu  
145 150 155 160  
Lys Glu Asn Gly Pro Met Ala Ser Asp Pro Leu Cys Leu Thr Tyr Ser  
165 170 175  
Tyr Leu Ser His Val Asp Leu Val Lys Asp Leu Asn Ser Gly Leu Ile  
180 185 190  
Gly Ala Leu Leu Val Cys Arg Glu Gly Ser Leu Ala Lys Glu Lys Thr

195	200	205
Gln Thr Leu His Lys Phe Ile Leu Leu Phe Ala Val Phe Asp Glu Gly		
210	215	220
Lys Ser Trp His Ser Glu Thr Lys Asn Ser Leu Met Gln Asp Arg Asp		
225	230	235
Ala Ala Ser Ala Arg Ala Trp Pro Lys Met His Thr Val Asn Gly Tyr		
	245	250
Val Asn Arg Ser Leu Pro Gly Leu Ile Gly Cys His Arg Lys Ser Val		
	260	265
Tyr Trp His Val Ile Gly Met Gly Thr Thr Pro Glu Val His Ser Ile		
	275	280
Phe Leu Glu Gly His Thr Phe Leu Val Arg Asn His Arg Gln Ala Ser		
	290	295
Leu Glu Ile Ser Pro Ile Thr Phe Leu Thr Ala Gln Thr Leu Leu Met		
305	310	315
Asp Leu Gly Gln Phe Leu Leu Phe Cys His Ile Ser Ser His Gln His		
	325	330
Asp Gly Met Glu Ala Tyr Val Lys Val Asp Ser Cys Pro Glu Glu Pro		
	340	345
Gln Leu Arg Met Lys Asn Asn Glu Glu Ala Glu Asp Tyr Asp Asp Asp		
	355	360
Leu Thr Asp Ser Glu Met Asp Val Val Arg Phe Asp Asp Asp Asn Ser		
	370	375
Pro Ser Phe Ile Gln Ile Arg Ser Val Ala Lys Lys His Pro Lys Thr		
385	390	395
Trp Val His Tyr Ile Ala Ala Glu Glu Glu Asp Trp Asp Tyr Ala Pro		
	405	410
Leu Val Leu Ala Pro Asp Asp Arg Ser Tyr Lys Ser Gln Tyr Leu Asn		
	420	425
Asn Gly Pro Gln Arg Ile Gly Arg Lys Tyr Lys Lys Val Arg Phe Met		
	435	440
Ala Tyr Thr Asp Glu Thr Phe Lys Thr Arg Glu Ala Ile Gln His Glu		
	450	455
Ser Gly Ile Leu Gly Pro Leu Leu Tyr Gly Glu Val Gly Asp Thr Leu		
465	470	475
Leu Ile Ile Phe Lys Asn Gln Ala Ser Arg Pro Tyr Asn Ile Tyr Pro		
	485	490
His Gly Ile Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys		
	500	505
Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe		
	515	520

Lys Tyr Lys Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp  
 530 535 540  
 Pro Arg Cys Leu Thr Arg Tyr Tyr Ser Ser Phe Val Asn Met Glu Arg  
 545 550 555 560  
 Asp Leu Ala Ser Gly Leu Ile Gly Pro Leu Leu Ile Cys Tyr Lys Glu  
 565 570 575  
 Ser Val Asp Gln Arg Gly Asn Gln Ile Met Ser Asp Lys Arg Asn Val  
 580 585 590  
 Ile Leu Phe Ser Val Phe Asp Glu Asn Arg Ser Trp Tyr Leu Thr Glu  
 595 600 605  
 Asn Ile Gln Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp  
 610 615 620  
 Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val  
 625 630 635 640  
 Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp  
 645 650 655  
 Tyr Ile Leu Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe  
 660 665 670  
 Ser Gly Tyr Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr  
 675 680 685  
 Leu Phe Pro Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro  
 690 695 700  
 Gly Leu Trp Ile Leu Gly Cys His Asn Ser Asp Phe Arg Asn Arg Gly  
 705 710 715 720  
 Met Thr Ala Leu Leu Lys Val Ser Ser Cys Asp Lys Asn Thr Gly Asp  
 725 730 735  
 Tyr Tyr Glu Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys  
 740 745 750  
 Asn Asn Ala Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Arg  
 755 760 765  
 Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Asp  
 770 775 780  
 Ile Glu Lys Thr Asp Pro Trp Phe Ala His Arg Thr Pro Met Pro Lys  
 785 790 795 800  
 Ile Gln Asn Val Ser Ser Ser Asp Leu Leu Met Leu Leu Arg Gln Ser  
 805 810 815  
 Pro Thr Pro His Gly Leu Ser Leu Ser Asp Leu Gln Glu Ala Lys Tyr  
 820 825 830  
 Glu Thr Phe Ser Asp Asp Pro Ser Pro Gly Ala Ile Asp Ser Asn Asn  
 835 840 845

Ser Leu Ser Glu Met Thr His Phe Arg Pro Gln Leu His His Ser Gly  
850 855 860

Asp Met Val Phe Thr Pro Glu Ser Gly Leu Gln Leu Arg Leu Asn Glu  
865 870 875 880

Lys Leu Gly Thr Thr Ala Ala Thr Glu Leu Lys Lys Leu Asp Phe Lys  
885 890 895

Val Ser Ser Thr Ser Asn Asn Leu Ile Ser Thr Ile Pro Ser Asp Asn  
900 905 910

Leu Ala Ala Gly Thr Asp Asn Thr Ser Ser Leu Gly Pro Pro Ser Met  
915 920 925

Pro Val His Tyr Asp Ser Gln Leu Asp Thr Thr Leu Phe Gly Lys Lys  
930 935 940

Ser Ser Pro Leu Thr Glu Ser Gly Gly Pro Leu Ser Leu Ser Glu Glu  
945 950 955 960

Asn Asn Asp Ser Lys Leu Leu Glu Ser Gly Leu Met Asn Ser Gln Glu  
965 970 975

Ser Ser Trp Gly Lys Asn Val Ser Ser Thr Glu Ser Gly Arg Leu Phe  
980 985 990

Lys Gly Lys Arg Ala His Gly Pro Ala Leu Leu Thr Lys Asp Asn Ala  
995 1000 1005

Leu Phe Lys Val Ser Ile Ser Leu Leu Lys Thr Asn Lys Thr Ser  
1010 1015 1020

Asn Asn Ser Ala Thr Asn Arg Lys Thr His Ile Asp Gly Pro Ser  
1025 1030 1035

Leu Leu Ile Glu Asn Ser Pro Ser Val Trp Gln Asn Ile Leu Glu  
1040 1045 1050

Ser Asp Thr Glu Phe Lys Lys Val Thr Pro Leu Ile His Asp Arg  
1055 1060 1065

Met Leu Met Asp Lys Asn Ala Thr Ala Leu Arg Leu Asn His Met  
1070 1075 1080

Ser Asn Lys Thr Thr Ser Ser Lys Asn Met Glu Met Val Gln Gln  
1085 1090 1095

Lys Lys Glu Gly Pro Ile Pro Pro Asp Ala Gln Asn Pro Asp Met  
1100 1105 1110

Ser Phe Phe Lys Met Leu Phe Leu Pro Glu Ser Ala Arg Trp Ile  
1115 1120 1125

Gln Arg Thr His Gly Lys Asn Ser Leu Asn Ser Gly Gln Gly Pro  
1130 1135 1140

Ser Pro Lys Gln Leu Val Ser Leu Gly Pro Glu Lys Ser Val Glu  
1145 1150 1155

Gly Gln Asn Phe Leu Ser Glu Lys Asn Lys Val Val Val Gly Lys

1160					1165					1170				
Gly	Glu	Phe	Thr	Lys	Asp	Val	Gly	Leu	Lys	Glu	Met	Val	Phe	Pro
1175						1180					1185			
Ser	Ser	Arg	Asn	Leu	Phe	Leu	Thr	Asn	Leu	Asp	Asn	Leu	His	Glu
1190						1195					1200			
Asn	Asn	Thr	His	Asn	Gln	Glu	Lys	Lys	Ile	Gln	Glu	Glu	Ile	Glu
1205						1210					1215			
Lys	Lys	Glu	Thr	Leu	Ile	Gln	Glu	Asn	Val	Val	Leu	Pro	Gln	Ile
1220						1225					1230			
His	Thr	Val	Thr	Gly	Thr	Lys	Asn	Phe	Met	Lys	Asn	Leu	Phe	Leu
1235						1240					1245			
Leu	Ser	Thr	Arg	Gln	Asn	Val	Glu	Gly	Ser	Tyr	Asp	Gly	Ala	Tyr
1250						1255					1260			
Ala	Pro	Val	Leu	Gln	Asp	Phe	Arg	Ser	Leu	Asn	Asp	Ser	Thr	Asn
1265						1270					1275			
Arg	Thr	Lys	Lys	His	Thr	Ala	His	Phe	Ser	Lys	Lys	Gly	Glu	Glu
1280						1285					1290			
Glu	Asn	Leu	Glu	Gly	Leu	Gly	Asn	Gln	Thr	Lys	Gln	Ile	Val	Glu
1295						1300					1305			
Lys	Tyr	Ala	Cys	Thr	Thr	Arg	Ile	Ser	Pro	Asn	Thr	Ser	Gln	Gln
1310						1315					1320			
Asn	Phe	Val	Thr	Gln	Arg	Ser	Lys	Arg	Ala	Leu	Lys	Gln	Phe	Arg
1325						1330					1335			
Leu	Pro	Leu	Glu	Glu	Thr	Glu	Leu	Glu	Lys	Arg	Ile	Ile	Val	Asp
1340						1345					1350			
Asp	Thr	Ser	Thr	Gln	Trp	Ser	Lys	Asn	Met	Lys	His	Leu	Thr	Pro
1355						1360					1365			
Ser	Thr	Leu	Thr	Gln	Ile	Asp	Tyr	Asn	Glu	Lys	Glu	Lys	Gly	Ala
1370						1375					1380			
Ile	Thr	Gln	Ser	Pro	Leu	Ser	Asp	Cys	Leu	Thr	Arg	Ser	His	Ser
1385						1390					1395			
Ile	Pro	Gln	Ala	Asn	Arg	Ser	Pro	Leu	Pro	Ile	Ala	Lys	Val	Ser
1400						1405					1410			
Ser	Phe	Pro	Ser	Ile	Arg	Pro	Ile	Tyr	Leu	Thr	Arg	Val	Leu	Phe
1415						1420					1425			
Gln	Asp	Asn	Ser	Ser	His	Leu	Pro	Ala	Ala	Ser	Tyr	Arg	Lys	Lys
1430						1435					1440			
Asp	Ser	Gly	Val	Gln	Glu	Ser	Ser	His	Phe	Leu	Gln	Gly	Ala	Lys
1445						1450					1455			
Lys	Asn	Asn	Leu	Ser	Leu	Ala	Ile	Leu	Thr	Leu	Glu	Met	Thr	Gly
1460						1465					1470			



Asp Gln	Arg Glu	Val Gly	Ser	Leu Gly	Thr Ser	Ala	Thr Asn	Ser	1475	1480	1485
Val Thr	Tyr Lys	Lys Val	Glu	Asn Thr	Val Leu	Pro	Lys Pro	Asp	1490	1495	1500
Leu Pro	Lys Thr	Ser Gly	Lys	Val Glu	Leu Leu	Pro	Lys Val	His	1505	1510	1515
Ile Tyr	Gln Lys	Asp Leu	Phe	Pro Thr	Glu Thr	Ser	Asn Gly	Ser	1520	1525	1530
Pro Gly	His Leu	Asp Leu	Val	Glu Gly	Ser Leu	Leu	Gln Gly	Thr	1535	1540	1545
Glu Gly	Ala Ile	Lys Trp	Asn	Glu Ala	Asn Arg	Pro	Gly Lys	Val	1550	1555	1560
Pro Phe	Leu Arg	Val Ala	Thr	Glu Ser	Ser Ala	Lys	Thr Pro	Ser	1565	1570	1575
Lys Leu	Leu Asp	Pro Leu	Ala	Trp Asp	Asn His	Tyr	Gly Thr	Gln	1580	1585	1590
Ile Pro	Lys Glu	Glu Trp	Lys	Ser Gln	Glu Lys	Ser	Pro Glu	Lys	1595	1600	1605
Thr Ala	Phe Lys	Lys Lys	Asp	Thr Ile	Leu Ser	Leu	Asn Ala	Cys	1610	1615	1620
Glu Ser	Asn His	Ala Ile	Ala	Ala Ile	Asn Glu	Gly	Gln Asn	Lys	1625	1630	1635
Pro Glu	Ile Glu	Val Thr	Trp	Ala Lys	Gln Gly	Arg	Thr Glu	Arg	1640	1645	1650
Leu Cys	Ser Gln	Asn Pro	Pro	Val Leu	Lys Arg	His	Gln Arg	Glu	1655	1660	1665
Ile Thr	Arg Thr	Thr Leu	Gln	Ser Asp	Gln Glu	Glu	Ile Asp	Tyr	1670	1675	1680
Asp Asp	Thr Ile	Ser Val	Glu	Met Lys	Lys Glu	Asp	Phe Asp	Ile	1685	1690	1695
Tyr Asp	Glu Asp	Glu Asn	Gln	Ser Pro	Arg Ser	Phe	Gln Lys	Lys	1700	1705	1710
Thr Arg	His Tyr	Phe Ile	Ala	Ala Val	Glu Arg	Leu	Trp Asp	Tyr	1715	1720	1725
Gly Met	Ser Ser	Ser Pro	His	Val Leu	Arg Asn	Arg	Ala Gln	Ser	1730	1735	1740
Gly Ser	Val Pro	Gln Phe	Lys	Lys Val	Val Phe	Gln	Glu Phe	Thr	1745	1750	1755
Asp Gly	Ser Phe	Thr Gln	Pro	Leu Tyr	Arg Gly	Glu	Leu Asn	Glu	1760	1765	1770

His Leu	Gly Leu Leu Gly	Pro Tyr Ile Arg Ala Glu	val Glu Asp
1775		1780	1785
Asn Ile	Met Val Thr Phe Arg	Asn Gln Ala Ser Arg	Pro Tyr Ser
1790		1795	1800
Phe Tyr	Ser Ser Leu Ile Ser	Tyr Glu Glu Asp Gln	Arg Gln Gly
1805		1810	1815
Ala Glu	Pro Arg Lys Asn Phe	Val Lys Pro Asn Glu	Thr Lys Thr
1820		1825	1830
Tyr Phe	Trp Lys Val Gln His	His Met Ala Pro Thr	Lys Asp Glu
1835		1840	1845
Phe Asp	Cys Lys Ala Trp Ala	Tyr Phe Ser Asp Val	Asp Leu Glu
1850		1855	1860
Lys Asp	Val His Ser Gly Leu	Ile Gly Pro Leu Leu	Val Cys His
1865		1870	1875
Thr Asn	Thr Leu Asn Pro Ala	His Gly Arg Gln Val	Thr Val Gln
1880		1885	1890
Glu Phe	Ala Leu Phe Phe Thr	Ile Phe Asp Glu Thr	Lys Ser Trp
1895		1900	1905
Tyr Phe	Thr Glu Asn Met Glu	Arg Asn Cys Arg Ala	Pro Cys Asn
1910		1915	1920
Ile Gln	Met Glu Asp Pro Thr	Phe Lys Glu Asn Tyr	Arg Phe His
1925		1930	1935
Ala Ile	Asn Gly Tyr Ile Met	Asp Thr Leu Pro Gly	Leu Val Met
1940		1945	1950
Ala Gln	Asp Gln Arg Ile Arg	Trp Tyr Leu Leu Ser	Met Gly Ser
1955		1960	1965
Asn Glu	Asn Ile His Ser Ile	His Phe Ser Gly His	Val Phe Thr
1970		1975	1980
Val Arg	Lys Lys Glu Glu Tyr	Lys Met Ala Leu Tyr	Asn Leu Tyr
1985		1990	1995
Pro Gly	Val Phe Glu Thr Val	Glu Met Leu Pro Ser	Lys Ala Gly
2000		2005	2010
Ile Trp	Arg Val Glu Cys Leu	Ile Gly Glu His Leu	His Ala Gly
2015		2020	2025
Met Ser	Thr Leu Phe Leu Val	Tyr Ser Asn Lys Cys	Gln Thr Pro
2030		2035	2040
Leu Gly	Met Ala Ser Gly His	Ile Arg Asp Phe Gln	Ile Thr Ala
2045		2050	2055
Ser Gly	Gln Tyr Gly Gln Trp	Ala Pro Lys Leu Ala	Arg Leu His
2060		2065	2070
Tyr Ser	Gly Ser Ile Asn Ala	Trp Ser Thr Lys Glu	Pro Phe Ser

2075	2080	2085
Trp Ile Lys Val Asp Leu Leu Ala Pro Met Ile Ile His Gly Ile 2090	2095	2100
Lys Thr Gln Gly Ala Arg Gln Lys Phe Ser Ser Leu Tyr Ile Ser 2105	2110	2115
Gln Phe Ile Ile Met Tyr Ser Leu Asp Gly Lys Lys Trp Gln Thr 2120	2125	2130
Tyr Arg Gly Asn Ser Thr Gly Thr Leu Met Val Phe Phe Gly Asn 2135	2140	2145
Val Asp Ser Ser Gly Ile Lys His Asn Ile Phe Asn Pro Pro Ile 2150	2155	2160
Ile Ala Arg Tyr Ile Arg Leu His Pro Thr His Tyr Ser Ile Arg 2165	2170	2175
Ser Thr Leu Arg Met Glu Leu Met Gly Cys Asp Leu Asn Ser Cys 2180	2185	2190
Ser Met Pro Leu Gly Met Glu Ser Lys Ala Ile Ser Asp Ala Gln 2195	2200	2205
Ile Thr Ala Ser Ser Tyr Phe Thr Asn Met Phe Ala Thr Trp Ser 2210	2215	2220
Pro Ser Lys Ala Arg Leu His Leu Gln Gly Arg Ser Asn Ala Trp 2225	2230	2235
Arg Pro Gln Val Asn Asn Pro Lys Glu Trp Leu Gln Val Asp Phe 2240	2245	2250
Gln Lys Thr Met Lys Val Thr Gly Val Thr Thr Gln Gly Val Lys 2255	2260	2265
Ser Leu Leu Thr Ser Met Tyr Val Lys Glu Phe Leu Ile Ser Ser 2270	2275	2280
Ser Gln Asp Gly His Gln Trp Thr Leu Phe Phe Gln Asn Gly Lys 2285	2290	2295
Val Lys Val Phe Gln Gly Asn Gln Asp Ser Phe Thr Pro Val Val 2300	2305	2310
Asn Ser Leu Asp Pro Pro Leu Leu Thr Arg Tyr Leu Arg Ile His 2315	2320	2325
Pro Gln Ser Trp Val His Gln Ile Ala Leu Arg Met Glu Val Leu 2330	2335	2340
Gly Cys Glu Ala Gln Asp Leu Tyr 2345	2350	

<210> 31  
 <211> 1471  
 <212> DNA  
 <213> Homo sapiens

<400> 31  
atggcgcccg tcgccgtctg ggccgcgctg gccgtcggac tggagctctg ggctgcggcg  
60  
cacgccttgc ccgccagggt ggcatttaca cctacgccc cggagccgg gagcacatgc  
120  
cggctcagag aatactatga ccagacagct cagatgtgct gcagcaaatg ctgcggggc  
180  
caacatgcaa aagtcttctg taccaagacc tcggacaccg tgtgtgactc ctgtgaggac  
240  
agcacatata ccagctctg gaactgggtt ccgagtgct tgagctgtgg ctcccgctgt  
300  
agctctgacc aggtggaac tcaagcctgc actcgggaac agaaccgat ctgcacctgc  
360  
aggcccggt ggtactgccc gctgagcaag caggaggggt gccggtgtg cgcccgctg  
420  
cgcaagtgcc gcccgggctt cggcgtggcc agaccaggaa ctgaaacatc agacgtggtg  
480  
tgcaagccct gtgccccggg gacgttctcc aacacgactt catccacgga tatttgagg  
540  
ccccaccaga totgtaacgt ggtggccatc cctgggaatg caagcatgga tgcagtctgc  
600  
acgtccacgt cccccaccg gagtatggcc ccagggcgag tacacttacc ccagccagtg  
660  
tccacacgat cccaacacac gcagccaact ccagaaccga gcactgctcc aagcacctcc  
720  
ttcctgctcc caatgggccc cagccccca gctgaaggga gcactggcga ctctcgtctt  
780  
ccagttggac tgatttgagg tgtgacagcc ttgggtctac taataatagg agtgggtaac  
840  
tgtgtcatca tgaccagggt gaaaaagaag cccttgctgc tcgagagaga agccaagggtg  
900  
cctcacttgc ctgcgataa ggcccggggt acacagggcc ccgagcagca gcacctgctg  
960  
atcacagcgc cgagctccag cagcagctcc ctggagagct oggccagtgc gttggacaga  
1020  
agggcgccca ctcggaacca gccacaggca ccaggcgtgg aggcagtgg ggcgggggag  
1080  
gcccgggcca gcaccgggag ctgagattct tccctggtg gccatgggac ccaggtcaat  
1140  
gtcacctgca tcgtgaacgt ctgtagcagc tctgaccaca gtcacagtgc ctctcccaa  
1200

gccagctcca caatgggaga cacagattcc agccctcgg agtccccgaa ggacgagcay  
1260

gtcccttct ccaaggagga atgtgcttt cggtcacagc tggagacgcc agagacccg  
1320

ctggggagca ccgaagagaa gccctgccc ottggagtgc ctgatgctgg gatgaagccc  
1380

agttaaccag gccggtgtgg gctgtgtogt agccaaggtg ggctgagccc tggcaggatg  
1440

accctgcgaa ggggccctgg tccctccagg c  
1471

<210> 32

<211> 461

<212> PRT

<213> Homo sapiens

<400> 32

Met Ala Pro Val Ala Val Trp Ala Ala Leu Ala Val Gly Leu Glu Leu  
1 5 10 15

Trp Ala Ala Ala His Ala Leu Pro Ala Gln Val Ala Phe Thr Pro Tyr  
20 25 30

Ala Pro Glu Pro Gly Ser Thr Cys Arg Leu Arg Glu Tyr Tyr Asp Gln  
35 40 45

Thr Ala Gln Met Cys Cys Ser Lys Cys Ser Pro Gly Gln His Ala Lys  
50 55 60

Val Phe Cys Thr Lys Thr Ser Asp Thr Val Cys Asp Ser Cys Glu Asp  
65 70 75 80

Ser Thr Tyr Thr Gln Leu Trp Asn Trp Val Pro Glu Cys Leu Ser Cys  
85 90 95

Gly Ser Arg Cys Ser Ser Asp Gln Val Glu Thr Gln Ala Cys Thr Arg  
100 105 110

Glu Gln Asn Arg Ile Cys Thr Cys Arg Pro Gly Trp Tyr Cys Ala Leu  
115 120 125

Ser Lys Gln Glu Gly Cys Arg Leu Cys Ala Pro Leu Arg Lys Cys Arg  
130 135 140

Pro Gly Phe Gly Val Ala Arg Pro Gly Thr Glu Thr Ser Asp Val Val  
145 150 155 160

Cys Lys Pro Cys Ala Pro Gly Thr Phe Ser Asn Thr Thr Ser Ser Thr  
165 170 175

Asp Ile Cys Arg Pro His Gln Ile Cys Asn Val Val Ala Ile Pro Gly  
180 185 190

Asn Ala Ser Met Asp Ala Val Cys Thr Ser Thr Ser Pro Thr Arg Ser  
195 200 205

Met Ala Pro Gly Ala Val His Leu Pro Gln Pro Val Ser Thr Arg Ser

210  
 Gln His Thr Gln Pro Thr Pro Glu Pro Ser Thr Ala Pro Ser Thr Ser :  
 225 230 235 240  
 Phe Leu Leu Pro Met Gly Pro Ser Pro Pro Ala Glu Gly Ser Thr Gly  
 245 250 255  
 Asp Phe Ala Leu Pro Val Gly Leu Ile Val Gly Val Thr Ala Leu Gly  
 260 265 270  
 Leu Leu Ile Ile Gly Val Val Asn Cys Val Ile Met Thr Gln Val Lys  
 275 280 285  
 Lys Lys Pro Leu Cys Leu Gln Arg Glu Ala Lys Val Pro His Leu Pro  
 290 295 300  
 Ala Asp Lys Ala Arg Gly Thr Gln Gly Pro Glu Gln Gln His Leu Leu  
 305 310 315 320  
 Ile Thr Ala Pro Ser Ser Ser Ser Ser Ser Leu Glu Ser Ser Ala Ser  
 325 330 335  
 Ala Leu Asp Arg Arg Ala Pro Thr Arg Asn Gln Pro Gln Ala Pro Gly  
 340 345 350  
 Val Glu Ala Ser Gly Ala Gly Glu Ala Arg Ala Ser Thr Gly Ser Ser  
 355 360 365  
 Asp Ser Ser Pro Gly Gly His Gly Thr Gln Val Asn Val Thr Cys Ile  
 370 375 380  
 Val Asn Val Cys Ser Ser Ser Asp His Ser Ser Gln Cys Ser Ser Gln  
 385 390 395 400  
 Ala Ser Ser Thr Met Gly Asp Thr Asp Ser Ser Pro Ser Glu Ser Pro  
 405 410 415  
 Lys Asp Glu Gln Val Pro Phe Ser Lys Glu Glu Cys Ala Phe Arg Ser  
 420 425 430  
 Gln Leu Glu Thr Pro Glu Thr Leu Leu Gly Ser Thr Glu Glu Lys Pro  
 435 440 445  
 Leu Pro Leu Gly Val Pro Asp Ala Gly Met Lys Pro Ser  
 450 455 460  
 <210> 33  
 <211> 1475  
 <212> DNA  
 <213> Homo sapiens  
 <400> 33  
 tccacctgtc ccgcagcgc cggtcgcgc cctactgcgc cagccaccga gccgcgctct  
 60  
 agcgccccga cctgcgccacc atgagagccc tgctggcgcg cctgcttctc tgcgtcctgg  
 120  
 tcgtgagcga ctccaaagcg agcaatgaac ttcataaagt tccatogaac tgtgactgtc  
 180

taaatggagg aacatgtgtg tocaacaagt acttctccaa cattcactgg tgcaactgcc  
240

caaagaaatt cggaggggcag cactgtgaaa tagataagtc aaaaacctgc tatgagggga  
300

atggtcactt ttaccggagga aaggccagca ctgacaccaa gggcggggcc tgccctgocct  
360

ggaactctgc cactgtcctt cagcaaacgt accatgcccc cagatctgat gctcttcagg  
420

tgggcctggg gaaacataat tactgcagga acccagacaa cggaggcgga cccctggtgct  
480

atgtgcaggt gggcctaaag ccgcttgtcc aagagtgcac ggtgcatgac tgccgagatg  
540

gaaaaaagcc ctccctctct ccagaagaat taaaatttca gtgtggccaa aagactctga  
600

ggcccccgtt taagattatt gggggagaat tcaccaccaa cgagaaccag cccctggttg  
660

cggccatcta caggaggcac cgggggggct ctgtcaccta cgtgtgtgga ggcagcctca  
720

tcagcccttg ctgggtgatc agcggccacac actgcttcat tgattaccca aagaaggagg  
780

actacatcgt ctacctgggt cgctcaagga ttaactccaa caagcaaggg gagatgaagt  
840

ttgaggtgga aaacctcctc ctacacaagg actacacgc tgacacgctt gctcaccaca  
900

acgacattgc cttgtctgaag atccgttcca aggaggcgag gtgtgcgcag ccatcccgga  
960

ctatacagac catctgcctg ccctcgatgt ataacgatcc ccagtttggc acaagctgtg  
1020

agatcactgg ctttgaaaaa gagaattcta ccgactatct ctatccggag cagctgaaga  
1080

tgactgttgt gaagctgatt tcccacggg agtgtcagca gccccactac tacggctctg  
1140

aagtcaccac caaaatgctg tgtgtgtgctg acccacagtg gaaaacagat tcctgccaag  
1200

gagactcagg gggacccctc gtctgttccc tccaaggcgg catgactttg actggaattg  
1260

tgagctgggg ccgtggatgt gccctgaagg acaagccagg cgtctacacg agagtctcac  
1320

acttcttacc ctggatccgc agtcacacca aggaagagaa tggcctggcc ctctgagggg  
1380

ccccagggag gaaacgggca ccaccogctt tcttgctggt tgcattttt gcagtagagt  
1440

catctccatc agctgtaaga agagactggg aagat  
1475

<210> 34  
<211> 431  
<212> PRT  
<213> Homo sapiens

<400> 34  
Met Arg Ala Leu Leu Ala Arg Leu Leu Leu Cys Val Leu Val Val Ser  
1 5 10 15  
Asp Ser Lys Gly Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys Asp  
20 25 30  
Cys Leu Asn Gly Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn Ile  
35 40 45  
His Trp Cys Asn Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile  
50 55 60  
Asp Lys Ser Lys Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly  
65 70 75 80  
Lys Ala Ser Thr Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser  
85 90 95  
Ala Thr Val Leu Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu  
100 105 110  
Gln Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg  
115 120 125  
Arg Arg Pro Trp Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln  
130 135 140  
Glu Cys Met Val His Asp Cys Ala Asp Gly Lys Lys Pro Ser Ser Pro  
145 150 155 160  
Pro Glu Glu Leu Lys Phe Gln Cys Gly Gln Lys Thr Leu Arg Pro Arg  
165 170 175  
Phe Lys Ile Ile Gly Gly Glu Phe Thr Thr Ile Glu Asn Gln Pro Trp  
180 185 190  
Phe Ala Ala Ile Tyr Arg Arg His Arg Gly Gly Ser Val Thr Tyr Val  
195 200 205  
Cys Gly Gly Ser Leu Ile Ser Pro Cys Trp Val Ile Ser Ala Thr His  
210 215 220  
Cys Phe Ile Asp Tyr Pro Lys Lys Glu Asp Tyr Ile Val Tyr Leu Gly  
225 230 235 240  
Arg Ser Arg Leu Asn Ser Asn Thr Gln Gly Glu Met Lys Phe Glu Val  
245 250 255  
Glu Asn Leu Ile Leu His Lys Asp Tyr Ser Ala Asp Thr Leu Ala His



260

265

270

His Asn Asp Ile Ala Leu Leu Lys Ile Arg Ser Lys Glu Gly Arg Cys  
 275 280 285  
 Ala Gln Pro Ser Arg Thr Ile Gln Thr Ile Cys Leu Pro Ser Met Tyr  
 290 295 300  
 Asn Asp Pro Gln Phe Gly Thr Ser Cys Glu Ile Thr Gly Phe Gly Lys  
 305 310 315 320  
 Glu Asn Ser Thr Asp Tyr Leu Tyr Pro Glu Gln Leu Lys Met Thr Val  
 325 330 335  
 Val Lys Leu Ile Ser His Arg Glu Cys Gln Gln Pro His Tyr Tyr Gly  
 340 345 350  
 Ser Glu Val Thr Thr Lys Met Leu Cys Ala Ala Asp Pro Gln Trp Lys  
 355 360 365  
 Thr Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Ser Leu  
 370 375 380  
 Gln Gly Arg Met Thr Leu Thr Gly Ile Val Ser Trp Gly Arg Gly Cys  
 385 390 395 400  
 Ala Leu Lys Asp Lys Pro Gly Val Tyr Thr Arg Val Ser His Phe Leu  
 405 410 415  
 Pro Trp Ile Arg Ser His Thr Lys Glu Glu Asn Gly Leu Ala Leu  
 420 425 430  
  
 <210> 35  
 <211> 107  
 <212> PRT  
 <213> Mus musculus  
  
 <400> 35  
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
 1 5 10 15  
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Val Asn Thr Ala  
 20 25 30  
 Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile  
 35 40 45  
 Tyr Ser Ala Ser Phe Leu Tyr Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60  
 Ser Arg Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
 65 70 75 80  
 Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln His Tyr Thr Thr Pro Pro  
 85 90 95  
 Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
 100 105

<210> 36  
 <211> 120

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 36

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr  
 20 25 30

Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45

Ala Arg Ile Tyr Pro Thr Asn Gly Tyr Thr Arg Tyr Ala Asp Ser Val  
 50 55 60

Lys Gly Arg Phe Thr Ile Ser Ala Asp Thr Ser Lys Asn Thr Ala Tyr  
 65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ser Arg Trp Gly Gly Asp Gly Phe Tyr Ala Met Asp Tyr Trp Gly Gln  
 100 105 110

Gly Thr Leu Val Thr Val Ser Ser  
 115 120

&lt;210&gt; 37

&lt;211&gt; 120

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 37

Gln Val Thr Leu Arg Glu Ser Gly Pro Ala Leu Val Lys Pro Thr Gln  
 1 5 10 15

Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Ser  
 20 25 30

Gly Met Ser Val Gly Trp Ile Arg Gln Pro Ser Gly Lys Ala Leu Glu  
 35 40 45

Trp Leu Ala Asp Ile Trp Trp Asp Asp Lys Lys Asp Tyr Asn Pro Ser  
 50 55 60

Leu Lys Ser Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln Val  
 65 70 75 80

Val Leu Lys Val Thr Asn Met Asp Pro Ala Asp Thr Ala Thr Tyr Tyr  
 85 90 95

Cys Ala Arg Ser Met Ile Thr Asn Trp Tyr Phe Asp Val Trp Gly Ala  
 100 105 110

Gly Thr Thr Val Thr Val Ser Ser  
 115 120

&lt;210&gt; 38

&lt;211&gt; 106

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 38

Asp Ile Gln Met Thr Gln Ser Pro Ser Thr Leu Ser Ala Ser Val Gly  
 1 5 10 15

Asp Arg Val Thr Ile Thr Cys Lys Cys Gln Leu Ser Val Gly Tyr Met  
 20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Trp Ile Tyr  
 35 40 45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser  
 50 55 60

Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Asp  
 65 70 75 80

Asp Phe Ala Thr Tyr Tyr Cys Phe Gln Gly Ser Gly Tyr Pro Phe Thr  
 85 90 95

Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
 100 105

&lt;210&gt; 39

&lt;211&gt; 1039

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 39

tccctgcacag gcagtgccctt gaagtgcctt ttcagagacc ttctctcata gactactttt  
 60

ttttctttaa gcagcaaaag gagaaaattg tcatcaaagg atattccaga ttcttgacag  
 120

cattctcgtc atctctgagg\*acatcaccat catctcagga tgaggggcat gaagctgctg  
 180

ggggcgctgc tggcactggc ggccctactg caggggggocg tgtccctgaa gatcgacagc  
 240

ttcaacatcc agacatttgg ggagaccaag atgtccaatg ccaccctcgt cagctacatt  
 300

gtgcagatcc tgagccgcta tgacatgcc ctggctcagg aggtcagaga cagccacctg  
 360

actgcogtgg ggaagctgct ggacaacctc aatcaggatg caccagacac ctatcactac  
 420

gtggtcagtg agccactggg acggaacagc tataaggagc gctacotgtt cgtgtacagg  
 480

cctgaccagg tgtctcgogt ggacagctac tactacgatg atggctgcga gccctgoggg  
 540

aaagacacct tcaaccgaga gccagccatt gtcagggttct tctccgggtt cacagaggtc  
 600

agggagtttg cattgtttcc cctgcatgog gccccggggg acgcagtagc cgagatcgac  
660

gctctctatg acgtctacct ggatgtccaa gagaaatggg gcttgaggga cgtcatgttg  
720

atgggcgact tcaatgcggg ctgcagctat gtgagaccct cccagtggtc atccatccgc  
780

ctgtggacaa gcccacactt ccagtggctg atccccgaca gcgctgacac cacagctaca  
840

cccacgcact gtgcctatga caggatcgtg gttgcaggga tgctgctccg aggcgcggtt  
900

gttcccgact cggctctttcc ctttaacttc caggctgcct atggcctgag tgaccaactg  
960

gcccagcca tcaagtacca ctatccagtg gaggtgatgc tgaagtgagc agcccctccc  
1020

cacaccagtt gaactgcag  
1039

<210> 40  
<211> 282  
<212> PRT  
<213> Homo sapiens

<400> 40  
Met Arg Gly Met Lys Leu Leu Gly Ala Leu Leu Ala Leu Ala Ala Leu  
1 5 10 15

Leu Gln Gly Ala Val Ser Leu Lys Ile Ala Ala Phe Asn Ile Gln Thr  
20 25 30

Phe Gly Glu Thr Lys Met Ser Asn Ala Thr Leu Val Ser Tyr Ile Val  
35 40 45

Gln Ile Leu Ser Arg Tyr Asp Ile Ala Leu Val Gln Glu Val Arg Asp  
50 55 60

Ser His Leu Thr Ala Val Gly Lys Leu Leu Asp Asn Leu Asn Gln Asp  
65 70 75 80

Ala Pro Asp Thr Tyr His Tyr Val Val Ser Glu Pro Leu Gly Arg Asn  
85 90 95

Ser Tyr Lys Glu Arg Tyr Leu Phe Val Tyr Arg Pro Asp Gln Val Ser  
100 105 110

Ala Val Asp Ser Tyr Tyr Tyr Asp Asp Gly Cys Glu Pro Cys Gly Asn  
115 120 125

Asp Thr Phe Asn Arg Glu Pro Ala Ile Val Arg Phe Phe Ser Arg Phe  
130 135 140

Thr Glu Val Arg Glu Phe Ala Ile Val Pro Leu His Ala Ala Pro Gly  
145 150 155 160

Asp Ala Val Ala Glu Ile Asp Ala Leu Tyr Asp Val Tyr Leu Asp Val

165

170

175

Gln Glu Lys Trp Gly Leu Glu Asp Val Met Leu Met Gly Asp Phe Asn  
180 185 190

Ala Gly Cys Ser Tyr Val Arg Pro Ser Gln Trp Ser Ser Ile Arg Leu  
195 200 205

Trp Thr Ser Pro Thr Phe Gln Trp Leu Ile Pro Asp Ser Ala Asp Thr  
210 215 220

Thr Ala Thr Pro Thr His Cys Ala Tyr Asp Arg Ile Val Val Ala Gly  
225 230 235 240

Met Leu Leu Arg Gly Ala Val Val Pro Asp Ser Ala Leu Pro Phe Asn  
245 250 255

Phe Gln Ala Ala Tyr Gly Leu Ser Asp Gln Leu Ala Gln Ala Ile Ser  
260 265 270

Asp His Tyr Pro Val Glu Val Met Leu Lys  
275 280

<210> 41  
<211> 678  
<212> DNA  
<213> Mus musculus

<400> 41  
gacatcttgc tgactcagtc tccagccatc ctgtctgtga gtccaggaga aagagtcagt  
60  
ttctcctgca gggccagtc gttcgttggc tcaagcatcc actggtatca gcaagaaca  
120  
aatggttctc caaggcttct cataaagtat gcttctgagt ctatgtcttg gatcccttc  
180  
aggtttagtg gcagtggatc agggacagat tttactctta gcatcaacac tgtggagtct  
240  
gaagatattg cagattatta ctgtcaacaa agtcatagct ggccattcac gttcggctcg  
300  
gggacaaatt tggaagtaaa agaagtgaag cttgaggagt ctggaggagg cttggtgcaa  
360  
cctggaggat coatgaaact ctctgtgtt gcctctggat tcattttcag taaccactgg  
420  
atgaactggg tccgccagtc tccagagaag gggcttgagt gggttgctga aattagatca  
480  
aaatctatta attctgcaac acattatgag gactctgtga aaggaggtt caccatctca  
540  
agagatgatt ccaaaagtc tgtctacctg caaatgaccg acttaagaac tgaagacact  
600  
ggcgtttatt actgttccag gaattactac ggtagtacct acgactactg gggccaaggc  
660

accactctca cagtctcc  
678

<210> 42  
<211> 226  
<212> PRT  
<213> Mus musculus

<400> 42  
Asp Ile Leu Leu Thr Gln Ser Pro Ala Ile Leu Ser Val Ser Pro Gly  
1 5 10 15  
Glu Arg Val Ser Phe Ser Cys Arg Ala Ser Gln Phe Val Gly Ser Ser  
20 25 30  
Ile His Trp Tyr Gln Gln Arg Thr Asn Gly Ser Pro Arg Leu Leu Ile  
35 40 45  
Lys Tyr Ala Ser Glu Ser Met Ser Gly Ile Pro Ser Arg Phe Ser Gly  
50 55 60  
Ser Gly Ser Gly Thr Asp Phe Thr Leu Ser Ile Asn Thr Val Glu Ser  
65 70 75 80  
Glu Asp Ile Ala Asp Tyr Tyr Cys Gln Gln Ser His Ser Trp Pro Phe  
85 90 95  
Thr Phe Gly Ser Gly Thr Asn Leu Glu Val Lys Glu Val Lys Leu Glu  
100 105 110  
Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Met Lys Leu Ser  
115 120 125  
Cys Val Ala Ser Gly Phe Ile Phe Ser Asn His Trp Met Asn Trp Val  
130 135 140  
Arg Gln Ser Pro Glu Lys Gly Leu Glu Trp Val Ala Glu Ile Arg Ser  
145 150 155 160  
Lys Ser Ile Asn Ser Ala Thr His Tyr Ala Glu Ser Val Lys Gly Arg  
165 170 175  
Phe Thr Ile Ser Arg Asp Asp Ser Lys Ser Ala Val Tyr Leu Gln Met  
180 185 190  
Thr Asp Leu Arg Thr Glu Asp Thr Gly Val Tyr Tyr Cys Ser Arg Asn  
195 200 205  
Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr  
210 215 220  
Val Ser  
225  
<210> 43  
<211> 450  
<212> DNA  
<213> Homo sapiens  
<400> 43

gtgcatcag aagagcccat caagcacatc actgtccttc tgccatggcc ctgtggatgc  
60

gcctcctgcc cctgtctggcg ctgctggccc tctggggacc tgaccagcc gcagcctttg  
120

tgaaccaaca cctgtgcggc tcacacctgg tggaagctct ctacctagtg tgcggggaac  
180

gaggcttctt ctacacacc aagaccogcc gggaggcaga ggacctgcag gtggggcagg  
240

tggagctggg cgggggccct ggtgcaggca gcctgcagcc cttggcctg gaggggtccc  
300

tgcagaagcg tggcattgtg gaacaatgct gtaccagcat ctgctccctc taccagctgg  
360

agaactactg caactagacg cagcccgag gcagccccc acccgccgcc tctgcaccg  
420

agagagatgg aataaagccc ttgaaccagc  
450

<210> 44  
<211> 110  
<212> PRT  
<213> Homo sapiens

<400> 44  
Met Ala Leu Trp Met Arg Leu Leu Pro Leu Leu Ala Leu Leu Ala Leu  
1 5 10 15  
Trp Gly Pro Asp Pro Ala Ala Ala Phe Val Asn Gln His Leu Cys Gly  
20 25 30  
Ser His Leu Val Glu Ala Leu Tyr Leu Val Cys Gly Glu Arg Gly Phe  
35 40 45  
Phe Tyr Thr Pro Lys Thr Arg Arg Glu Ala Glu Asp Leu Gln Val Gly  
50 55 60  
Gln Val Glu Leu Gly Gly Gly Pro Gly Ala Gly Ser Leu Gln Pro Leu  
65 70 75 80  
Ala Leu Glu Gly Ser Leu Gln Lys Arg Gly Ile Val Glu Gln Cys Cys  
85 90 95  
Thr Ser Ile Cys Ser Leu Tyr Gln Leu Glu Asn Tyr Cys Asn  
100 105 110

<210> 45  
<211> 1203  
<212> DNA  
<213> Hepatitis B virus

<400> 45  
atgggaggtt ggtcttccaa acctcgacaa ggcattggga cgaatcttct tgttcccaat  
60

cctctgggat tctttccoga tcaccagttg gacctgogt toggagccaa ctccacaaat  
120

ccagattggg acttcaacco caacaaggat cactggccag aggcaatcaa ggtaggagcg  
180

ggagacttog ggccagggtt caccacca caoggggtc tttggggtg gagccctcag  
240

gctcagggca tattgacaac agtgccagca gcgactctc ctgtttccac caatcggcag  
300

tcagggaagac agcctactcc catctctcca cctctaagag acagtcattc tcaggccatg  
360

cagtggaaact ccacaacatt ccaccaagct ctgctagatc ccagagttag gggcctatat  
420

tttctgctg gtggctccag ttccggaaca gtaaacctg ttccgactac tgtctaccc  
480

atatogcaa tcttctcgag gactggggac cctgcaccga acatggagag cacaacatca  
540

ggattcctag gacctctgt cgtgttacag ggggggttt tottggtgac aagaatcctc  
600

acaataccac agagtctaga ctctgtgtg acttctctca atttcttagg gggagcacc  
660

acgtgtctg gccaaaattc gcagtccca acctccaac actcacaac ctctgtctc  
720

ccaatttgc ctggttatog ctggatgtgt ctgagggtt ttatcatatt cctcttcac  
780

ctgtctgtat gctcatctt ctgttggtt cttctggact accaaggat gttgccggt  
840

tgctctctac ttccaggaac atcaactacc agcacgggac catgcaagac ctgcacgatt  
900

cctgtcaag gaacctctat gtttctctt tgttgctgta caaaccttc ggacggaaac  
960

tgcacttgta ttccatccc atcatcttg gctttogcaa gattcctatg ggagtgggac  
1020

tcagtcggtt tctcctggt cagtttacta gtgcatttg ttcagtgtt cgcagggtt  
1080

tcctccactg tttggttct agtttatgg atgatgtgt attgggggac aagtctgtac  
1140

aacatottga gtccotttt acctctatta ccaatttct tttgtcttg ggtatacat  
1200

tga  
1203

&lt;210&gt; 46



<211> 400  
 <212> PRT  
 <213> Hepatitis B virus

<400> 46

Met Gly Gly Trp Ser Ser Lys Pro Arg Gln Gly Met Gly Thr Asn Leu  
 1 5 10 15

Ser Val Pro Asn Pro Leu Gly Phe Phe Pro Asp His Gln Leu Asp Pro  
 20 25 30

Ala Phe Gly Ala Asn Ser Asn Asn Pro Asp Trp Asp Phe Asn Pro Asn  
 35 40 45

Lys Asp His Trp Pro Glu Ala Ile Lys Val Gly Ala Gly Asp Phe Gly  
 50 55 60

Pro Gly Phe Thr Pro Pro His Gly Gly Leu Leu Gly Trp Ser Pro Gln  
 65 70 75 80

Ala Gln Gly Ile Leu Thr Thr Val Pro Ala Ala Pro Pro Pro Val Ser  
 85 90 95

Thr Asn Arg Gln Ser Gly Arg Gln Pro Thr Pro Ile Ser Pro Pro Leu  
 100 105 110

Arg Asp Ser His Pro Gln Ala Met Gln Trp Asn Ser Thr Thr Phe His  
 115 120 125

Gln Ala Leu Leu Asp Pro Arg Val Arg Gly Leu Tyr Phe Pro Ala Gly  
 130 135 140

Gly Ser Ser Ser Gly Thr Val Asn Pro Val Pro Thr Thr Val Ser Pro  
 145 150 155 160

Ile Ser Ser Ile Phe Ser Arg Thr Gly Asp Pro Ala Pro Asn Met Glu  
 165 170 175

Ser Thr Thr Ser Gly Phe Leu Gly Pro Leu Leu Val Leu Gln Ala Gly  
 180 185 190

Phe Phe Leu Leu Thr Arg Ile Leu Thr Ile Pro Gln Ser Leu Asp Ser  
 195 200 205

Trp Trp Thr Ser Leu Asn Phe Leu Gly Gly Ala Pro Thr Cys Pro Gly  
 210 215 220

Gln Asn Ser Gln Ser Pro Thr Ser Asn His Ser Pro Thr Ser Cys Pro  
 225 230 235 240

Pro Ile Cys Pro Gly Tyr Arg Trp Met Cys Leu Arg Arg Phe Ile Ile  
 245 250 255

Phe Leu Phe Ile Leu Leu Leu Cys Leu Ile Phe Leu Leu Val Leu Leu  
 260 265 270

Asp Tyr Gln Gly Met Leu Pro Val Cys Pro Leu Leu Pro Gly Thr Ser  
 275 280 285

Thr Thr Ser Thr Gly Pro Cys Lys Thr Cys Thr Ile Pro Ala Gln Gly  
 290 295 300

Thr Ser Met Phe Pro Ser Cys Cys Cys Thr Lys Pro Ser Asp Gly Asn  
305 310 315 320

Cys Thr Cys Ile Pro Ile Pro Ser Ser Trp Ala Phe Ala Arg Phe Leu  
325 330 335

Trp Glu Trp Ala Ser Val Arg Phe Ser Trp Leu Ser Leu Leu Val Pro  
340 345 350

Phe Val Gln Trp Phe Ala Gly Leu Ser Pro Thr Val Trp Leu Ser Val  
355 360 365

Ile Trp Met Met Trp Tyr Trp Gly Pro Ser Leu Tyr Asn Ile Leu Ser  
370 375 380

Pro Phe Leu Pro Leu Leu Pro Ile Phe Phe Cys Leu Trp Val Tyr Ile  
385 390 395 400

<210> 47

<211> 799

<212> DNA

<213> Homo sapiens

<400> 47

cgaaccactc agggctcgtg ggacagctca cctagctgca atggctacag gctcccgac  
60

gtccctgctc ctggcttttg gctgctctg cctgccctgg cttcaagagg gcagtgcctt  
120

cccaaccatt cccttatcca ggcttttga caacgctatg ctcogcgccc atcgtctgca  
180

ccagctggcc ttgacacct accaggagtt tgaagaagcc tatatccaa aggaacagaa  
240

gtattcattc ctgcagaacc ccagacctc cctctgttcc tcagagtcta ttccgacacc  
300

ctccaacagg gaggaacac aacagaaac caacctagag ctgctccgca tctccctgct  
360

gctcatccag tcgtggctgg agcccgctga gttcctcagg agtgtcttcg ccaacagcct  
420

ggtgtacggc gctctgaca gcaacgtcta tgacctccta aaggacctag aggaaggcat  
480

ccaaacgctg atggggaggc tggaagatgg cagcccccg actgggcaga tcttcaagca  
540

gacctacagc aagttcgaca caaactcaca caacgatgac gcactactca agaactacgg  
600

gctgctctac tgcttcagga aggacatgga caaggctcag acattcctgc gcatcgtgca  
660

gtgccgctct gtggagggca gctgtggctt ctgctgccc ggggtggcat cctgtgaccc  
720

ctccccagtg cctctcctgg ccttggaagt tgccactcca gtgccacca gccctgtcct  
780

aataaaatta agttgcac  
799

<210> 48  
<211> 217  
<212> PRT  
<213> Homo sapiens

<400> 48  
Met Ala Thr Gly Ser Arg Thr Ser Leu Leu Leu Ala Phe Gly Leu Leu  
1 5 10 15  
Cys Leu Pro Trp Leu Gln Glu Gly Ser Ala Phe Pro Thr Ile Pro Leu  
20 25 30  
Ser Arg Pro Phe Asp Asn Ala Met Leu Arg Ala His Arg Leu His Gln  
35 40 45  
Leu Ala Phe Asp Thr Tyr Gln Glu Phe Glu Ala Tyr Ile Pro Lys  
50 55 60  
Glu Gln Lys Tyr Ser Phe Leu Gln Asn Pro Gln Thr Ser Leu Cys Phe  
65 70 75 80  
Ser Glu Ser Ile Pro Thr Pro Ser Asn Arg Glu Glu Thr Gln Gln Lys  
85 90 95  
Ser Asn Leu Glu Leu Leu Arg Ile Ser Leu Leu Leu Ile Gln Ser Trp  
100 105 110  
Leu Glu Pro Val Gln Phe Leu Arg Ser Val Phe Ala Asn Ser Leu Val  
115 120 125  
Tyr Gly Ala Ser Asp Ser Asn Val Tyr Asp Leu Leu Lys Asp Leu Glu  
130 135 140  
Glu Gly Ile Gln Thr Leu Met Gly Arg Leu Glu Asp Gly Ser Pro Arg  
145 150 155 160  
Thr Gly Gln Ile Phe Lys Gln Thr Tyr Ser Lys Phe Asp Thr Asn Ser  
165 170 175  
His Asn Asp Asp Ala Leu Leu Lys Asn Tyr Gly Leu Leu Tyr Cys Phe  
180 185 190  
Arg Lys Asp Met Asp Lys Val Glu Thr Phe Leu Arg Ile Val Gln Cys  
195 200 205  
Arg Ser Val Glu Gly Ser Cys Gly Phe  
210 215

<210> 49  
<211> 963  
<212> DNA  
<213> Homo sapiens

<400> 49

atggagacag acacactcct gttatgggtg ctgctgctct ggggtccagg tccactggc  
60  
gacgtcaggc gagggccccc gagcctgagg ggcaggggacg cgccagcccc caccgcctgc  
120  
gtcccgggcg agtgcttcga cctgctggtc cgccactgag tggcctgagg gctcctgagc  
180  
acgcccgggc cgaaaccggc cgggggccag agccctgagc ccaggacggc gctgcagccg  
240  
caggagtcgg tgggcggggg ggccggcgag gcggcggtcg acaaaactca cacatgccca  
300  
ccgtgccag cactgaact cctgggggga cgtcagtcct tctcttccc cccaaaaccc  
360  
aaggacaccc tcatgatctc ccgagaccct gaggtcacat gcgtgggtgt ggacgtgagc  
420  
cacgaagacc ctgaggtcga gtccaactgg tacgtggagc gcgtggaggt gcataatgcc  
480  
aagacaaagc cgcgggagga gcagtacaac agcacgtacc gtgtggtcag cgtcctcacc  
540  
gtcctgcacc aggactggct gaattggcaag gactacaagt gcaaggctct caacaaagcc  
600  
ctcccagccc ccattgagaa aaccatctcc aaagccaaag ggcagccccg agaaccacag  
660  
gtgtacaccc tgccccatc cgggatgag ctgaccaaga accaggtcag cctgacctgc  
720  
tgggtcaaa gctctatcc cagcgacatc gccgtggagt gggagagcaa tgggcagccg  
780  
gagaacaact acaagaccac gcctcccggt ttggactccg acggctcctt ctctctctac  
840  
agcaagctca ccgtggacaa gagcaggtgg cagcagggga acgtcttctc atgctccgtg  
900  
atgcatgagg ctctgcacaa ccactacag cagaagagcc tctcctgtc tcccgggaaa  
960

tga  
963

<210> 50  
<211> 320  
<212> PRT  
<213> Homo sapiens

<400> 50  
Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro  
1 5 10 15  
Gly Ser Thr Gly Asp Val Arg Arg Gly Pro Arg Ser Leu Arg Gly Arg

20 25 30  
 Asp Ala Pro Ala Pro Thr Pro Cys Val Pro Ala Glu Cys Phe Asp Leu  
 35 40 45  
 Leu Val Arg His Cys Val Ala Cys Gly Leu Leu Arg Thr Pro Arg Pro  
 50 55 60  
 Lys Pro Ala Gly Ala Ser Ser Pro Ala Pro Arg Thr Ala Leu Gln Pro  
 65 70 75 80  
 Gln Glu Ser Val Gly Ala Gly Ala Gly Glu Ala Ala Val Asp Lys Thr  
 85 90 95  
 His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser  
 100 105 110  
 Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg  
 115 120 125  
 Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro  
 130 135 140  
 Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala  
 145 150 155 160  
 Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val  
 165 170 175  
 Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr  
 180 185 190  
 Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr  
 195 200 205  
 Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu  
 210 215 220  
 Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys  
 225 230 235 240  
 Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser  
 245 250 255  
 Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp  
 260 265 270  
 Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser  
 275 280 285  
 Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala  
 290 295 300  
 Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys  
 305 310 315 320

<210> 51  
 <211> 107  
 <212> PRT  
 <213> Homo sapiens

<400> 51  
 Asp Ile Gln Met Thr Gln Thr Pro Ser Thr Leu Ser Ala Ser Val Gly  
 1 5 10 15  
 Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Asp Ile Asn Asn Tyr  
 20 25 30  
 Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile  
 35 40 45  
 Tyr Tyr Thr Ser Thr Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60  
 Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro  
 65 70 75 80  
 Asp Asp Phe Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro Trp  
 85 90 95  
 Thr Phe Gly Gln Gly Thr Lys Val Glu Val Lys  
 100 105

<210> 52  
 <211> 107  
 <212> PRT  
 <213> Mus musculus

<400> 52  
 Asp Ile Gln Met Thr Gln Thr Thr Ser Ser Leu Ser Ala Ser Leu Gly  
 1 5 10 15  
 Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Asp Ile Asn Asn Tyr  
 20 25 30  
 Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Ile Val Lys Leu Leu Ile  
 35 40 45  
 Tyr Tyr Thr Ser Thr Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60  
 Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu Gln  
 65 70 75 80  
 Glu Asp Ile Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro Trp  
 85 90 95  
 Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
 100 105

<210> 53  
 <211> 119  
 <212> PRT  
 <213> Homo sapiens

<400> 53  
 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser  
 1 5 10 15  
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ala Phe Thr Asn Tyr  
 20 25 30

Leu Ile Glu Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile  
35 40 45

Gly Val Ile Tyr Pro Gly Ser Gly Gly Thr Asn Tyr Asn Glu Lys Phe  
50 55 60

Lys Gly Arg Val Thr Leu Thr Val Asp Glu Ser Thr Asn Thr Ala Tyr  
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Phe Cys  
85 90 95

Ala Arg Arg Asp Gly Asn Tyr Gly Trp Phe Ala Tyr Trp Gly Gln Gly  
100 105 110

Thr Leu Val Thr Val Ser Ser  
115

<210> 54

<211> 119

<212> PRT

<213> Mus musculus

<400> 54

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Gly Pro Gly Thr  
1 5 10 15

Ser Val Arg Val Ser Cys Lys Ala Ser Gly Tyr Ala Phe Thr Asn Tyr  
20 25 30

Leu Ile Glu Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile  
35 40 45

Gly Val Ile Tyr Pro Gly Ser Gly Gly Thr Asn Tyr Asn Glu Lys Phe  
50 55 60

Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Thr Thr Ala Tyr  
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Asp Asp Ser Ala Val Tyr Phe Cys  
85 90 95

Ala Arg Arg Asp Gly Asn Tyr Gly Trp Phe Ala Tyr Trp Gly Arg Gly  
100 105 110

Thr Leu Val Thr Val Ser Ala  
115

<210> 55

<211> 214

<212> PRT

<213> Homo sapiens

<400> 55

Asp Ile Gln Met Thr Gln Thr Pro Ser Thr Leu Ser Ala Ser Val Gly  
1 5 10 15

Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Asp Ile Asn Asn Tyr  
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile

35                      40                      45  
 Tyr Tyr Thr Ser Thr Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50                      55                      60  
 Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro  
 65                      70                      75                      80  
 Asp Asp Phe Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro Trp  
 85                      90                      95  
 Thr Phe Gly Gln Gly Thr Lys Val Glu Val Lys Arg Thr Val Ala Ala  
 100                      105                      110  
 Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly  
 115                      120                      125  
 Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala  
 130                      135                      140  
 Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln  
 145                      150                      155                      160  
 Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser  
 165                      170                      175  
 Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr  
 180                      185                      190  
 Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser  
 195                      200                      205  
 Phe Asn Arg Gly Glu Cys  
 210  
 <210> 56  
 <211> 448  
 <212> PRT  
 <213> Homo sapiens  
 <400> 56  
 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser  
 1                      5                      10                      15  
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ala Phe Thr Asn Tyr  
 20                      25                      30  
 Leu Ile Glu Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile  
 35                      40                      45  
 Gly Val Ile Tyr Pro Gly Ser Gly Gly Thr Asn Tyr Asn Glu Lys Phe  
 50                      55                      60  
 Lys Gly Arg Val Thr Leu Thr Val Asp Glu Ser Thr Asn Thr Ala Tyr  
 65                      70                      75                      80  
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Phe Cys  
 85                      90                      95  
 Ala Arg Arg Asp Gly Asn Tyr Gly Trp Phe Ala Tyr Trp Gly Gln Gly  
 100                      105                      110



Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe  
 115 120 125  
 Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu  
 130 135 140  
 Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp  
 145 150 155 160  
 Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu  
 165 170 175  
 Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser  
 180 185 190  
 Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro  
 195 200 205  
 Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys  
 210 215 220  
 Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro  
 225 230 235 240  
 Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser  
 245 250 255  
 Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp  
 260 265 270  
 Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn  
 275 280 285  
 Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val  
 290 295 300  
 Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu  
 305 310 315 320  
 Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys  
 325 330 335  
 Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr  
 340 345 350  
 Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr  
 355 360 365  
 Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu  
 370 375 380  
 Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu  
 385 390 395 400  
 Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys  
 405 410 415  
 Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu  
 420 425 430

Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Pro Gly  
 435 440 445

<210> 57  
 <211> 8540  
 <212> DNA  
 <213> Homo sapiens

<400> 57  
 gacgtcgagg ccgctctagg cctccaaaa agcctcctca ctacttctgg aatagctcag  
 60  
 aggccgaggc ggootcggcc tctgcataaa taaaaaaat tagtcagcca tgcattggggc  
 120  
 ggagaatggg cggaactggg cggagttagg ggcgggatgg gcggagtttag gggcggggact  
 180  
 atggttgctg actaattgag atgcatgctt tgcatacttc tgcctgctgg ggagcctggg  
 240  
 gactttccac acctgggtgc tgactaattg agatgcattc tttgcatact totgcctgct  
 300  
 ggggagcctg gggactttcc acaccctaac tgacacacat tccacagaat taattccct  
 360  
 agttattaat agtaatcaat tacgggggtca ttagttcata gccatataat ggagttcogg  
 420  
 gttacataac ttacggtaaa tggcccgccct ggctgacggc ccaagaccc ccgcccattg  
 480  
 acgtcaataa tgaagtatgt tcccatagta acgccaatag ggactttcca ttgactgcaa  
 540  
 tgggtggact atttacggta aactgccac ttggcagtag atcaagtga tcatatgcca  
 600  
 agtacgccc ctattgacgt caatgacggg aaatggccc cctggcatta tgcccagtag  
 660  
 atgaccttat gggactttcc tacttggcag tacatctacg tattagtcat cgctattacc  
 720  
 atggtgatgc ggttttggca gtacatcaat gggcggtgat agcggtttga ctacggggga  
 780  
 ttccaagtc tccaccccat tgacgtcaat gggagttgt ttggcacca aaatcaacgg  
 840  
 gactttocaa aatgtcgtaa caactccgcc ccattgacgc aaatggggcg tagggtgta  
 900  
 cgggtggagg tctatataag cagagctggg tacgtgaacc gtcagatgc ctggagaagg  
 960  
 catcacagat ctctcaccat gaggggtccc gctcagctcc tggggctcct gctgctctgg  
 1020

ctcccagggtg cacgatgtga tggtagcaag gtggaaatca aacgtacggt ggctgcacca  
1080

tctgtcttca tcttcccgcc atctgatgag cagttgaaat ctggaactgc ctctgtttgtg  
1140

tgccctgtga ataacttcta tcccagagag gccaaagtac agtggaaggt ggataacgcc  
1200

ctccaatcgg gtaactccca ggagagtgtc acagagcagg acagcaagga cagcacctac  
1260

agcctcagca gcaccctgac gctgagcaaa gcagactacg agaaacacaa agtctacgcc  
1320

tgcgaagtca cccatcaggg cctgagctcg cccgtcaca agagcttcaa caggggagag  
1380

tggtgaattc agatccgtta acggttacca actacctaga ctggtattgt gacaacatgc  
1440

ggcgtgata tctacgtatg atcagcctcg actgtgcctt ctagtgtcca gccatctgtt  
1500

gtttgcccct ccccgctgpc ttccttgacc ctggaaggtg ccactccac tgctcttcc  
1560

taataaaatg aggaattgc atcgattgt ctgagtaggt gtcattctat tctgggggtg  
1620

ggggtggggc aggcagcaa gggggaggtg tgggaagaca atagcaggca tgctggggat  
1680

gcggtgggct ctatggaacc agctggggct cgacagctat gccaaagtac cccctattg  
1740

acgtcaatga cgttaaatg ccgcctggc attatgccca gtacatgacc ttatgggact  
1800

ttctacttg gcagtacatc tacgtattag tcatcgctat taccatggtg atgcggttt  
1860

ggcagtacat caatgggcgt ggatagcgtt ttgactcacg gggatttcca agtctccacc  
1920

ccattgacgt caatgggagt ttgttttggc accaaaatca acgggacttt ccaaaatgc  
1980

gtaacaactc cgccccattg acgcaaatg gcggtaggcg tgtacggtg gaggtctata  
2040

taagcagagc tgggtacgtc ctacattca gtgatcagca ctgaacacag acccgtcgac  
2100

atgggttgga gcctcatctt gctcttctt gtcgctgttg ctacgcgtgt cgctagcacc  
2160

aagggcccat cggtcttccc cctggcacc cctccaaga gcaacctctg gggcacagcg  
2220

gccttggtgct gcctggtcaa ggactacttc ccogaaccgg tgacgggtgc gtggaaccua  
2280

ggcgccctga ccagcggcgt gcacaccttc ccgggtgtcc tacagtcttc aggactctac  
2340

tccttcagca gcgtggtgac cgtgccctcc agcagcttgg gcaccagac ctacatctgc  
2400

aacgtgaatc acaagcccag caacaccaaag gtggacaaga aagcagagcc caaatcttgt  
2460

gacaaaactc acacatgcc accgtgcca gcacctgaac tcctgggggg accgtcagtc  
2520

ttctcttcc ccccaaaacc caaggacacc ctcatgatct ccgggacccc tgaggtcaca  
2580

tgctgtgttg tggagctgag ccacgaagac cctgaggtca agttcaactg gtacgtggac  
2640

ggcgtggagg tgcataatgc caagacaaag ccgcggggagg agcagtacaa cagcacgtac  
2700

cgtgtggtca gcgtcctcacc cgtcctgcac caggactggc tgaatggcaa ggactacaag  
2760

tgcaaggctt ccaacaaga cctcccagcc cccatcgaga aaacctctc caaagccaaa  
2820

gggcagcccc gagaaccaca ggtgtacacc ctgcccccat ccggggatga gctgaccagg  
2880

aaccaggctc gcctgacctg cctggtcaaa ggcttctatc ccagcgacat cgccgtggag  
2940

tgggagagca atgggcagcc ggagaacaac tacaagacca cgctcccggt gctggactcc  
3000

gacggctcct tcttctctca cagcaagctc accgtggaca agagcaggtg gcagcagggg  
3060

aacgtcttct catgctccgt gatgcatgag gctctgcaca accactacac gcagaagagc  
3120

ctctccctgt ctccgggtaa atgaggatcc gttaaoggtt accaactacc tagactggat  
3180

tcgtgacaac atgcggccgt gatatacag tatgatcagc ctgcactgtg ccttctagtt  
3240

gccagccatc tgttgtttgc cctcccccgg tgccttctct gaccctggaa ggtgccactc  
3300

ccactgtcct ttctaataa aatgaggaaa ttgcatcgca ttgtctgagt aggtgtcatt  
3360

ctattctggg ggggtgggtg gggcaggaca gcaaggggga ggattgggaa gacaatagca  
3420

ggcatgctgg ggatgcggtg ggctctatgg aaccagctgg ggctcgacag cgctggatcc  
3480

cccgatcccc agctttgctt ctcaatttct tatttgcata atgagaaaaa aaggaaaatt  
3540

aattttaaca ccaattcagt agttgattga gcaaatgcgt tgccaaaaag gatgctttag  
3600

agacagtgtt ctctgcacag ataaggacaa acattattca gaggagtagc ccagagctga  
3660

gactcctaag ccagtgagtg gcacagcatt ctaggagaaa atatgcttgt catcacggaa  
3720

gcctgattcc gtagagccac accttggtaa gggccaatct gctcacacag gatagagagg  
3780

gcaggagcca gggcagagca tataagggtga ggtaggatca gttgctctc acatttgctt  
3840

ctgacatagt tgtgttgga gcttgtag cttggacagc tcagggtgc gatttcgctc  
3900

caaacttgac ggcaatccta gcgtgaaggc tggtaggatt ttatccccgc tgccatcatg  
3960

gttcgaccat tgaactgcct cgtcgccgtg tcccaaaata tggggattgg caagaacgga  
4020

gacctaccct ggcctccgct caggaacgag ttcaagtact tccaagaat gaccacaacc  
4080

tcttcagtgg aaggtaaaca gaatctggtg attatgggta ggaaaacctg gttctccatt  
4140

cctgagaaca atcgaccttt aaaggacaga attaatatag ttctcagtag agaactcaaa  
4200

gaaccaccac gaggagctca ttttcttgcc aaaagtittg atgatgcctt aagacttatt  
4260

gaacaaccgg aattggcaag taaagtagac atggtttgga tagtcggagg cagttctgtt  
4320

taccaggaag ccatgaatca accaggccac cttagactct ttgtgacaag gatcatcgag  
4380

gaatttgaaa gtgacacgtt tttccagaa attgatttgg ggaaatataa acttctccca  
4440

gaataccag gcgtcctctc tgagggtccag gaggaaaaag gcatcaagta taagtittgaa  
4500

gtctacgaga agaaagacta acaggaagat gctttcaagt tctctgtccc cctcctaaag  
4560

tcatgcattt ttataagacc atgggacttt tgctggcttt agatcagcct cgactgtgcc  
4620

ttctagttgc cagccatctg ttgtttgcc ctcgccgtg ccttcottga ccttggaagg  
4680

tgccactccc actgtccttt cctaataaaa tgaggaaatt gcctgcgatt gtctgagtag  
4740

gtgtcattct attctggggg gtgggtggg gcaggacagc aagggggagg attgggaaga  
4800

caatagcagg catgtcgggg atgcggtggg ctctatggaa ccagctgggg ctogagctac  
4860

tagctttgct tctcaatttc ttatttgoat aatgagaaaa aaaggaatat taattttaac  
4920

accaattcag tagttgattg agcaaatgcg ttgccaaaaa ggatgcttta gagacagtgt  
4980

tctctgcaca gataaggaca aacattatc agagggagta ccagagctg agactcctaa  
5040

gccagtgagt ggcacagcat tctagggaga aatatgcttg tcatcaccca agcotgattc  
5100

cgtagagcca cacttggtga agggccaatc tgctcacaca ggatagagag ggcaggagcc  
5160

agggcagagc atataagggtg aggtaggatc agttgctcct cacatttgct tctgacatag  
5220

ttgtgttggg agcttgatc gatcctctat gttgaacaa gatggattgc acgcaggttc  
5280

tcggcgctg tgggtggaga ggctattcgg ctatgactgg gcacaacaga caatcggctg  
5340

ctctgatgcc gcctgttcc ggctgtcagc gcaggggcgc ccggttcttt ttgtcaagac  
5400

cgacctgtcc ggtgccctga atgaactgca ggacgagcca gcgcggctat cgtggctggc  
5460

caogacgggc gttccttgcg cagctgtgct cgacgttgc actgaagcgg gaagggactg  
5520

gtgtctattg ggcgaagtgc cggggcagga tctcctgtca tctcaacttg ctctgcgca  
5580

gaaagtatcc atcatggctg atgcaatgcg gcggctgcat acgcttgatc cggctacctg  
5640

ccattcgac caaccaagca aacatcgcat cgagcgagca cgtactcgga tggaaagccg  
5700

tcttgctgat caggatgatc tggacgaaga gcatcagggg ctgcgcgacg ccgaactgtt  
5760

cgccaggctc aaggcgcgca tgcccgacgg cgaggatctc gtctgacccc atggcgatgc  
5820

ctgcttgccg aatatcatgg.tggaaaatgg ccgcttttct ggattcatcy aclytyggcy  
5880

gctgggtgtg gcggaccgct atcaggacat agcgttgctt acccgtgata ttgctgaaga  
5940

gcttgccggc gaatgggtg accgcttcct cgtgctttac ggtatcgccg ctcccgatt  
6000

cgcagcgcat cgccttctat cgccttcttg acgagttctt ctgagcggga ctctggggtt  
6060

cgaatgacc gaccaagcga cgcaccaact gccatcacga gatttcgatt ccaccgccgc  
6120

cttctatgaa aggttgggtt tcggaatcgt ttccggggac gccggtgga tgatcctcca  
6180

gocgggggat ctcatgtgg agttcttcgc ccaccccaac ttgtttattg cagcttataa  
6240

tggttacaaa taaagcaata gcacacaaaa ttccacaaat aaagcatttt ttccactgca  
6300

ttctagttgt ggtttgtcca aactcatcaa totatcttat catgtctgga tcgcgccgcg  
6360

gatccgtcg agagcttggc gtaatcatgg tcatagctgt ttctgtgtg aaattgttat  
6420

ccgctcacaa ttccacacaa catacgagcc ggagcataaa gtgtaaagcc tgggggtgct  
6480

aatgagttag ctaactocaa ttaattgcgt tgcgtcact gcccgcttcc cagtgggaa  
6540

acctgtctgt ccagctgcac taatgaatcg gccaacgcgc ggggagaggc ggtttgcgta  
6600

ttggggcgtc ttccgcttcc tcgctcactg actcgtcgc ctggtgctt oggctggggc  
6660

gagcggatc agctcactca aaggcggtaa tacggttatc cacagaatca ggggataacg  
6720

caggaaagaa catgtgagca aaaggccagc aaaaggccag gaaccgtaaa aaggccgcgt  
6780

tgctggcgtt ttccatagg ctccgcccc ctgacgagca tcacaaaaat cgacgctcaa  
6840

gtcagagggt gcgaaacccg acaggactat aaagatacca ggcgtttccc cctggaagct  
6900

ccctcgtcgc ctctcctgtt ccgacccctc cgtttaccgc atacctgtcc gcctttctcc  
6960

cttcgggaag cgtggcgctt tctcaatgct cagcgtgtag gtatctcagt tcggtgtagg  
7020

togttcgtct caagctgggc tgtgtgcacg aaccccccg tccagccogac cgtcgcgcct  
7080

tatccggtaa ctatcgtctt gagtccaacc cggtaaagaca cgacttatcg ccactggcag  
7140

cagccactgg taacaggatt agcagagcga ggtatgtagg cggtgctaca gagtctctga  
7200

agtgggtggc taactacggc tacactagaa ggacagtatt tggatatctgc gctctgctga  
7260

agccagttac cttcggaata agagttggta gctcttgatc cggcaaaaaa accaccgctg  
7320

gtacgggtgg tttttttgtt tgcaagcagc agattacgcg cagaaaaaaa ggtctcaag  
7380

aagatccttt gatcttttct acggggctct acgtcagtg gaacgaaac tcacgttaaag  
7440

ggatttttgt catgagatta tcaaaaagga tottcaccta gatcctttta aattaaatat  
7500

gaagttttta atcaatctaa agtatatatg agtaaaactg gtctgacagt taccaatgct  
7560

taatcagtg ggcacctatc tcacgatct gtctatttcg ttcacccata gttgctgac  
7620

tcccgtctg gtacataact acgatacggg agggcttacc atctggcccc agtctgcaa  
7680

tgataccgcg agaccacgc tcaccggctc cagatttato agcaataaac cagccagcg  
7740

gaagggccga ggcgagaagt ggtcctgcaa ctttatccgc ctccatccag totattaatt  
7800

gttcogggga agctagagta agtagttcgc cagttaatag ttgcgcaac gttgttgcaa  
7860

ttgtacagg catcgtggtg tcacgctcgt cgtttggtat ggcttcattc agctccggtt  
7920

cccaacgac aaggcgagtt acatgatccc ccattgttg caaaaagcg gttagctcct  
7980

tcggctctcc gatcgttgtc agaagtaagt tggcgcagc gttatcactc atggttatgg  
8040

cagcactgca taattctctt actgtcatgc catccgtaag atgcttttct gtgactgggt  
8100

agtactcaac caagtcatto tgagaatagt gtatgoggcg accgagttgc tcttgcccg  
8160

cgtaataacg ggataatacc ggcacacata gcagaacttt aaaagtgctc atcattggaa  
8220



aaogttctt ggggcgaaaa.ctctcaagga tcttaccgct gttgagatcc agttcgalyt  
8280

aaccactog tgacccaac tgatcttcag catcttttac tttaccagc gtttctgggt  
8340

gagcaaaaa aggaaggcaa aatgccgcaa aaaagggaat aaggcgaca cggaaatgtt  
8400

gaatactcat actcttcctt tttcaatatt attgaagcat ttatcagggt tattgtctca  
8460

tgagcgata catatttgaa tgtatttaga aaaataaaca aatagggtt cgcgcacat  
8520

ttcccgaaa agtgccacct  
8540

<210> 58

<211> 9209

<212> DNA

<213> Mus musculus

<400> 58

gacgtcgcg cgcctctag cctccaaaa agcctcctca ctacttctgg aatagctcag  
60

aggccgaggc ggccctcgcc tctgcataaa taaaaaaat tagtcagcca tgcattgggg  
120

ggagaatggg cggaactggg cggagttagg ggccggatgg gcggagttag gggcgggact  
180

atggttgctg actaattgag atgcatgctt tgcatacttc tgccctgctg ggagcctggg  
240

gactttccac acctgggtgc tgactaattg agatgcagtc ttgcatact tctgcctgct  
300

ggggagcctg gggactttcc acaccctaac tgacacacat tccacagaat taattccct  
360

agttattaat agtaatcaat tacgggggtca ttagttcata gccatatat ggagttccgc  
420

gttacataac ttacggtaaa tggcccgctt ggctgacgc ccaacgacc ccgccattg  
480

acgtcaataa tgacgtatgt tcccatagta acgccaatag ggactttcca ttgacgtcaa  
540

tgggtggact atttacggt aactgccac ttggcagtag atcaagtgt tcatatgcca  
600

agtaaccccc ctattgacgt caatgacgt aaatggcccg cctggcatta tgccagtagt  
660

atgaccttat gggactttcc tacttggcag tacatctacg tattagtcat cgctattacc  
720

atggtgatgc ggttttggca gtacatcaat gggcgtggat accggttga ctacgcgga  
780

tttccaagtc tccaccccat tgacgtcaat gggagtttgt tttggcacca aaatcaacgg  
840

gactttocaa aatgtcgtaa caactccgcc ccattgacgc aaatgggcgg taggcgtgta  
900

cggtgggagg totatataag cagagctggg taactgaaco gtcagatcgc ctggagacgc  
960

catcacagat ctctcactat ggattttcag gtgcagatta tcagcttctt gctaatcagt  
1020

gcttcagtca taatgtccag aggacaaatt gttctctccc agtctccagc aatcctgtct  
1080

gcctctccag gggagaaggt cacaatgact tgcagggcc gctcaagtgt aagttacatc  
1140

cactgggttc agcagaagcc aggatcctcc cccaaaccct ggatttatgc cacatccaac  
1200

ctggcttctg gagtccctgt tcgcttcagt ggcagtggtg ctgggaattc ttaactcttc  
1260

acaatcagca gagtggaggc tgaagatgct gccacttatt actgccagca gtggactagt  
1320

aaccacacca cgttcggagg ggggaccaag ctggaaatca aacgtacggt ggctgcacca  
1380

tctgtcttca tcttcccgcc atctgatgag cagttgaaat ctggaactgc ctctgtttg  
1440

tgccctgctga ataacttcta tcccagagag gccaaagtac agtgggaagg ggataacgcc  
1500

ctccaatogg gtaactccca ggagagtgtc acagagcagg acagcaagga cagcacctac  
1560

agcctcagca gcacctgac gctgagcaaa gcagactacg agaaacacaa agtctacgcc  
1620

tgogaagtea cccatcaggc cctgagctcg ccgctcaca agagcttcaa caggggagag  
1680

tgttgaattc agatcgtta acggttacca actacctaga ctggatttgt gacaacatgc  
1740

ggcogtgata tctacgtatg atcagcctcg actgtgcctt ctagttgcc gcoactctgt  
1800

gtttgccct ccccgctgcc ttccctgacc ctggaagggt ccactccac tgtctttcc  
1860

taataaaatg aggaaattgt atcgcattgt ctgagtaggt gtcattctat tctggggggg  
1920

ggggtggggc aggacagcaa gggggaggat tgggaagaca atagcaggca tgctggggat  
1980

gcggtgggct ctatggaacc agctggggct cgacagctat gccaaagtacg cccctattg  
2040

acgtcaatga cggtaaatgg ccgcctggc attatgcccc gtacatgacc ttatgggact  
2100

ttcctacttg gcagtacatc tacgtattag tcacgcctat taccatgggtg atcggtttt  
2160

ggcagtcacat caatgggct ggatagcggg ttgactcacg gggatttcca agtctccacc  
2220

ccattgacgt caatgggagt ttgttttggc accaaaatca acgggacttt ccaaaatgct  
2280

gtaacaactc gcgcccttg acgcaaatgg gcggtaggcg tgtacggtgg gaggtctata  
2340

taagcagagc tgggtacgtc ctcacattca gtgatcagca ctgaacacag acccgctgac  
2400

atgggttga gctcatctt gctcttctt gtcgtgttg ctacgcgtgt cctgtcccag  
2460

gtacaactgc agcagcctgg ggctgagctg gtgaagcctg gggcctcagt gaagatgtcc  
2520

tgcaaggctt ctggctacac atttaccagt tacaatatgc actgggtaaa acagacacct  
2580

ggtcggggcc tggaatggat tggagctatt tatcccgaa atggtgatac ttcctacaat  
2640

cagaagtcca aaggcaaggc cacattgact gcagacaaat cctccagcac agcctacatg  
2700

cagctcagca gctgacatc tgaggactct gcggtctatt actgtgcaag atcgacttac  
2760

tacggcgggtg actggtactt caatgtctgg gggcagggga ccacggctac cgtctctgca  
2820

gctagacca agggccatc ggtcttccc ctggcacctt cctccaagag cacctctggg  
2880

ggcacagcgg ccctgggctg cctggtaag gactacttc ccgaaccggt gacggtgtcg  
2940

tggaactcag gcgccctgac cagcggcgtg cacaccttc cgctgtcct acagtcctca  
3000

ggactctact cctcagcag cgtggtgacc gtgccctcca gcagcttggg caccagacc  
3060

tacatctgca acgtgaatca caagcccagc aacaccaagg tggacaagaa agcagagccc  
3120

aaatcctgtg acaaaactca..cacatgccca ccggtgccag cacctgaact cctgggggga  
3180

ccgtcagtct tcctcttccc cccaaaaccc aaggacaccc tcatgatctc ccggaacct  
3240

gaggtcacat cgggtggtgt ggacgtgagc cacgaagacc ctgagggtcaa gttcaactgg  
3300

tacgtggacg cgggtggagg gcataatgcc aagacaaagc cgcgggagga gcagtacaac  
3360

agcacgtacc gtgtggtcag cgtctcacc gtctgcacc aggactggct gaatggcaag  
3420

gagtacaagt gcaagggtct caacaaagcc ctcccagccc ccctcgagaa aacctctcc  
3480

aaagccaaag ggcagccccc agaaccacag gtgtacaccc tgcccccac ccgggatgag  
3540

ctgaccaaga accaggtoag cctgacctgc ctggtcaag gcttctatcc cagcgacac  
3600

gccgtggagt gggagagcaa tgggcagccg gagaacaaact acaagaccac gcctcccggt  
3660

ctggactcgg acggctcctt cttcctctac agcaagctca ccgtggacaa gagcagggtg  
3720

cagcagggga acgtcttctc atgctccgtg atgcatgagg ctctgcacaa ccactacacg  
3780

cagaagagcc tctcctgtc tcggggtaaa tgaggatccg ttaacgggtta ccaactacct  
3840

agactggatt cgtgacaaca tgcggccgtg atatctacgt atgatcagcc tgactgtgc  
3900

cttctagttg ccagccatct gttgtttgcc cctcccctg gccttccttg acctggaag  
3960

gtgccactcc cactgtcctt tcttaataaa atgaggaaat tgcctgcacat tgtctgagta  
4020

ggtgtcattc tattctgggg ggtgggggtg ggcaggacag caagggggag gattgggaag  
4080

acaatagcag gcactgctgg gatgoggtgg gctctatgga accagctggg gctcgacagc  
4140

gctggatctc ccgatcccca gctttgcttc tcaatttctt atttgcataa tgagaaaaaa.  
4200

aggaaaatta attttaacac caattcagta gttgattgag caaatgcgtt gccaaaaagg  
4260

atgctttaga gacagtgttc tctgcacaga taaggacaaa cattattcag agggagtacc  
4320

cagagctgag actcctaagc cagtgagtgg cacagcattc tagggagaaa tatgcttggc  
4380

atcacogaag cctgattccg tagagccaca ccttggttaag ggccaatctg ctcacacagg  
4440

atagagaggg caggagccag ggcagagcat ataaggtgag gtaggatcag ttgctcctca  
4500

catttgcttc tgacatagtt gtgttgggag cttggatagc ttggacagct cagggtctgcg  
4560

atttcgcgcc aaacttgacg gcaatcctag cgtgaaggct ggtaggattt tatccccgct  
4620

gccatcatgg ttgcacatt gaactgcac gtgcgcgtgt cccaaaatat ggggattggc  
4680

aagaacggag acctacocctg gcctccgctc aggaacaggt tcaagtactt ccaagaagt  
4740

accacaacct cttcagtga aggtaaacag aatctggtga ttatgggtag gaaaacctgg  
4800

ttctocattc ctgagaagaa togacctta aaggacagaa ttaatatagt tctcagtaga  
4860

gaactcaaag aaccaccaag aggagctcat ttctttgcca aaagtttga tgatgcctta  
4920

agacttattg aacaaccgga attggcaagt aaagtagaca tggtttggat agtcggaggc  
4980

agttctgttt accaggaagc catgaatcaa ccaggccacc ttagactctt tgtgacaagg  
5040

atcatgcagg aatttgaaag tgacagttt ttccagaaaa ttgatttggg gaaatataaa  
5100

cttctcccag aataccagg cgtcctctct gaggtccagg aggaaaaagg catcaagtat  
5160

aaagtttgaag totacgagaa gaaagactaa cagggaagatg ctttcaagtt ctctgtctcc  
5220

ctcctaaagc tatgcatttt tataagaacca tgggactttt gctggcttta gatcagcctc  
5280

gactgtgcct totagtggc agccatctgt tgtttgccc tcccogtgc cttccttgac  
5340

octggaaggt gccactcca ctgtccttto ctaataaaat gaggaattg catcgattg  
5400

tctgagtagg tgtcattcta ttctgggggg tgggtggggg caggacagca agggggagga  
5460

ttgggaagac aatagcaggc atgctgggga tgcggtgggc totatggaac cagctggggc  
5520

tggagctact agctttgctt ctcaatttct tatttgcata atgagaaaaa aaggaaaatt  
5580

aattttaaca ocaattcagt agttgattga gcaaatacgt tgccaaaaag gatgctttag  
5640

agacagtgtt ctctgcacag ataaggacaa acattattca gaggagtagc ccagagctga  
5700

gactcctaag ccagtgagtg gcacagcatt ctaggagaaa atatgcttgt catcacogaa  
5760

gcttgattcc gtagagccac accttggtta gggccaatct gctcacacag gatagagagg  
5820

gcaggagcca gggcagagca tataaggtga ggtaggatca gttgctctc acatttgctt  
5880

ctgacatagt tgtgttggga gcttgatcg atcctctatg gttgaacaag atggattgca  
5940

cgcaggttct cgggcgcgtt gggtggagag gctattcggc tatgactggg cacaacagac  
6000

aatcggctgc tctgatgcc cgtgttcg gctgtcagcg cagggggcgc cggtttttt  
6060

tgtaagacc gacctgtccg gtgcctgaa tgaactgcag gacgaggcag cgcgcctatc  
6120

gtggctggcc acgacgggcg ttccctggcg agctgtgctc gacgttgtca ctgaagcggg  
6180

aagggaactg ctgctattgg gcgaagtccc ggggcaggat ctccgtgcat ctacacctgc  
6240

tcctgccgag aaagtatcca tcatggctga tgcaatgcgg cggctgcata cgcttgatcc  
6300

ggctacctgc ccattogacc accaagcgaa acatcgatc gagcgagcac gtactcggat  
6360

ggaagccggt cttgtcgatc aggatgatct ggaogaagag catcaggggc tcgcgcacag  
6420

cgaactgttc gccaggctca aggcgcgat gccgcagggc gaggatctcg tcgtgaccca  
6480

tgcgatgcc tgcttgccga atatcatggt ggaataatggc cgtttttctg gattcatoga  
6540

ctgtggccgg ctgggtgtgg cggacogcta tcaggacata gcttggtcta ccgtgatatt  
6600

tgctgaagag cttggcggcg aatgggctga ccgcttcctc gtgctttacg gtatgcgcg  
6660

tccogattcg cagcgcatcg ccttctatcg ccttcttgac gagtcttctt gagcgggact  
6720

ctgggggttcg aaatgaccga ccaagcgacg cccaacctgc catcacgaga ttctgattcc  
6780

accgcgcct tctatgaaag gttgggcttc ggaatcgttt tccgggacgc cggctggatg  
6840

atcctccagc gcggggatct catgctggag ttcttgcgc accccaactt gtttattgca  
6900

gcttataatg gttacaata aagcaatagc atcacaatt tcacaaataa agcattttt  
6960

tcactgcatt ctagtgtggg ttgtccaaa ctcatcaatc tatcttatca tgtctggatc  
7020

gcggccgcga tcccgctcag agcttggcgt aatcatggtc atagctgttt cctgtgtgaa  
7080

attgttatcc gctcacaaat ccacacaaca tacgagccgg aagcataaag tgtaaagcct  
7140

ggggtgccta atgagtgcgc taactcacat taattgcgtt gcgctcactg cccgctttcc  
7200

agtcgggaaa cctgtcgtgc cagctgcatt aatgaatcgg ccaacgcgcg gggagaggcg  
7260

gtttgcgtat tgggcgtct tccgcttct cgtcactga ctogctgcgc tcggctgttc  
7320

ggctgcggcg agcggatatc gctcactcaa aggcggtaat acggttatcc acagaatcag  
7380

gggataacgc aggaagaac atgtgagcaa aaggccagca aaaggccagg aaccgtaaaa  
7440

aggccgcgtt gctggcgttt ttccataggc tcgcgcgc tgacgagcat cacaaaaatc  
7500

gacgctcaag tcagagggtg cgaaaccga caggactata aagataccag gcgtttcccc  
7560

ctggaagctc cctcgtgcgc tctcctgttc cgacctgcc gcttacggga tacctgtccg  
7620

ctttctctcc ttccggaagc gtggcgcttt ctcaatgctc acgctgtagg tatctcagtt  
7680

cgggtgaggt cgttcgctcc aagctgggct gtgtgcacga acccccgtt cagcccgacc  
7740

gtgcgcctt atocggtaac tatcgtcttg agtccaacc ggtaagacac gacttatcgc  
7800

cactggcagc agccactggg aacaggatta gcagagcgag gtatgtaggc ggtgctacag  
7860

agttcttgaa gtgggtggcct aactacggct acactagaag gacagtattt ggtatctgcg  
7920

ctctgctgaa gccaggtacc .ttcgaaaaa gaggttgtag ctcttgatcc ggcaacaaaa  
7980

ccaccgtgg tagcgggtgt tttttgttt gcaagcagca gattacgcgc agaaaaaaag  
8040

gatotcaaga agatcctttg atcttttcta cggggctga cgctcagtg aacgaaaact  
8100

cacgtaaag gattttggc atgagattat caaaaaggat ctacacctag atccttttaa  
8160

attaaaaatg aagtttttaa tcaatctaaa gtatatatga gtaaaacttg tctgacagt  
8220

accaatgctt aatcagtgag gcacctatct cagcgatctg tctatttctg tcatccatag  
8280

ttgcctgact ccccgctgg tagataacta cgatacggga gggcttaaca tctggcccca  
8340

gtgctgcaat gataccgga gaccacgct caccggctcc agatttatca gcaataaacc  
8400

agccagccgg aagggccgag cgcagaagtg gtcttgcaac ttatccgcc tccatccagt  
8460

ctattaattg ttgcgggaa gctagagtaa gtagttcgcc agttaatagt ttgcgcaacg  
8520

ttgttgcoat tgctacaggc atcgtggtgt cagcgtcgtc gtttggtatg gcttcattca  
8580

gtcccggttc ccaacgatca aggcgagtta catgatccc catgtttgac aaaaaagcg  
8640

ttagctcctt cgttctcgc atcgttgtca gaagtaagt ggccgcagtg ttatcaatca  
8700

tggttatggc agcactgcat aattctctta ctgtcatgcc atccgtaaga tgcctttctg  
8760

tgactggtga gtactcaacc aagtcattct gagaatagt tatgcggcga ccgagttgct  
8820

cttgcccgcc gtcaatacgg gataatacgg cgcacatag cagaacttta aaagtgtca  
8880

tcattgaaa acgttcttcg gggcgaaaac tctcaaggat ctaccgctg ttgagatcca  
8940

gttcgatgta acccactcgt gcacccaact gatcttcagc atcttttact ttaccacgg  
9000

ttctgggtg agcaaaaaa ggaaggcaaa atgccgcaaa aaagggaata agggcgacac  
9060

ggaaatgttg aataactcata ctcttcttt ttcaatatta ttgaagcatt tatcaggggt  
9120



attgtctcat gagcggtatc atatttgaat gtatttagaa aaataacaaa ataggggtcc  
9180

cgcgcacatt tccccgaaaa gtgccacct  
9209

<210> 59  
<211> 384  
<212> DNA  
<213> Mus musculus

<400> 59  
atggattttc aggtgcagat tatcagcttc ctgctaataca gtgcttcagt cataatgtcc  
60

agagggcaaa ttgttctctc ccagttctcca gcaatcctgt ctgcatctcc agggggagaag  
120

gtcacaatga cttgcagggc cagctcaagt gtaagttaca tccactgggt ccagcagaag  
180

ccaggatcct cccccaaacc ctggatttat gccacatcca acctggcttc tggagtcctc  
240

gttcgcttca gtggcagtggt gtctgggact tcttactctc tcacaatcag cagagtggag  
300

gtgtaagatg ctgccactta ttactgccag cagtgggacta gtaaccacc caggttcgga  
360

ggggggacca agctggaaat caaa  
384

<210> 60  
<211> 128  
<212> PRT  
<213> Mus musculus

<400> 60  
Met Asp Phe Gln Val Gln Ile Ile Ser Phe Leu Leu Ile Ser Ala Ser  
1 5 10 15

Val Ile Met Ser Arg Gly Gln Ile Val Leu Ser Gln Ser Pro Ala Ile  
20 25 30

Leu Ser Ala Ser Pro Gly Glu Lys Val Thr Met Thr Cys Arg Ala Ser  
35 40 45

Ser Ser Val Ser Tyr Ile His Trp Phe Gln Gln Lys Pro Gly Ser Ser  
50 55 60

Pro Lys Pro Trp Ile Tyr Ala Thr Ser Asn Leu Ala Ser Gly Val Pro  
65 70 75 80

Val Arg Phe Ser Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile  
85 90 95

Ser Arg Val Glu Ala Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp  
100 105 110

Thr Ser Asn Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
 115 120 125

<210> 61  
 <211> 420  
 <212> DNA  
 <213> Mus musculus

<400> 61  
 atgggttgga gcctcatctt gctcttctt gtcgctgttg ctacgcgtgt cctgtcccag  
 60

gtacaactgc agcagcctgg ggcgtagctg gtgaagcctg gggcctcagt gaagatgtcc  
 120

tgcaaggctt ctggctacac atttaccagt tacaatatgc actgggtaaa acagacacct  
 180

ggtcgggggc tggaatggat tggagctatt tatcccgaa atggtgatac ttctacaat  
 240

cagaagtca aaggcaaggc cacattgact gcagacaaat cctccagcac agcctacatg  
 300

cagctcagca gctgacatc tgaggactct gcggcttatt actgtgcaag atcgacttac  
 360

tacggcgggtg actggtactt caatgtcttg ggcgcaggga ccacggtcac cgtctctgca  
 420

<210> 62  
 <211> 140  
 <212> PRT  
 <213> Mus musculus

<400> 62  
 Met Gly Trp Ser Leu Ile Leu Leu Phe Leu Val Ala Val Ala Thr Arg  
 1 5 10 15

Val Leu Ser Gln Val Gln Leu Gln Gln Pro Gly Ala Glu Leu Val Lys  
 20 25 30

Pro Gly Ala Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe  
 35 40 45

Thr Ser Tyr Asn Met His Trp Val Lys Gln Thr Pro Gly Arg Gly Leu  
 50 55 60

Glu Trp Ile Gly Ala Ile Tyr Pro Gly Asn Gly Asp Thr Ser Tyr Asn  
 65 70 75 80

Gln Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser  
 85 90 95

Thr Ala Tyr Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val  
 100 105 110

Tyr Tyr Cys Ala Arg Ser Thr Tyr Tyr Gly Gly Asp Trp Tyr Phe Asn  
 115 120 125

Val Trp Gly Ala Gly Thr Thr Val Thr Val Ser Ala

130

135

140

<210> 63  
<211> 1395  
<212> DNA  
<213> Homo sapiens

<400> 63  
atgtattcca atgtgatagg aactgtaacc tctggaaaaa ggaaggttta tcttttgtcc  
60  
ttgctgtctca ttggttctg ggactgogtg acctgtcacc ggagccctgt ggacatctgc  
120  
acagccaagc cgcgggacat tcccatgaat cccatgtgca ttaccgctc ccgggagaag  
180  
aaggcaactg aggatgaggg ctgagaacag aagatcccg aggccaccaa cggcggtgct  
240  
tgggaactgt ccaaggccaa ttcccgcttt gctaccactt totatcagca cctggcagat  
300  
tccaagaatg acaatgataa cattttctg tcaccctga gtatctccac ggcttttgc  
360  
atgaccaagc tgggtgcctg taatgacacc ctccagcaac tgatggaggt atttaagttt  
420  
gacaccatat ctgagaaaac atctgatcag atccacttct tctttgcaa actgaactgc  
480  
cgactctatc gaaaagocaa caaatcctcc aagttagat cagccaatcg ctttttgg  
540  
gacaaatccc ttacottcaa tgagacctac caggacatca gtgagttggt atatggagcc  
600  
aagotccagc ccotggactt caaggaaaat gcagagcaat ccagagcggc catcaacaaa  
660  
tgggtgtcca ataagacga aggccgaatc accgatgtca ttccctcgga agccatcaat  
720  
gagctcactg ttctggtgct ggttaacacc atttacttca agggcctgtg gaagtcaaa  
780  
ttcagccctg agaacacaag gaaggaactg ttctacaagg ctgatggaga gtcgtgttca  
840  
gcattctatg tgtaccagga aggcaagttc cgttatcggc gcgtggctga aggcacccag  
900  
gtgcttgagt tgccttcaa aggtgatgac atcaccatgg tctcatctt gcccaagcct  
960  
gagaagagcc tggccaaggt ggagaaggaa ctcacccag aggtgtctga ggagtggctg  
1020  
gatgaattgg aggagatgat gctgggtggtc cacatgcccc gcttcgcat tgaggacggc  
1080

ttcagtttga aggagcagct gcaagacatg ggccttgctg atctgttcag cctgaaaag  
1140

tccaaactcc caggtattgt tgcagaaggo cgagatgacc tctatgtctc agatgcattc  
1200

cataaggcat ttcttgaggt aatgaagaa ggcagtgaag cagctgcaag taccgctggt  
1260

gtgattgctg gccgttcgct aaacccaac agggtgactt tcaaggccaa caggccttcc  
1320

ctggttttta taagagaagt tcctctgaac actattatct tcatgggcag agtagccaac  
1380

ccttggtgta agtaa  
1395

<210> 64  
<211> 464  
<212> PRT  
<213> Homo sapiens

<400> 64  
Met Tyr Ser Asn Val Ile Gly Thr Val Thr Ser Gly Lys Arg Lys Val  
1 5 10 15

Tyr Leu Leu Ser Leu Leu Leu Ile Gly Phe Trp Asp Cys Val Thr Cys  
20 25 30

His Gly Ser Pro Val Asp Ile Cys Thr Ala Lys Pro Arg Asp Ile Pro  
35 40 45

Met Asn Pro Met Cys Ile Tyr Arg Ser Pro Glu Lys Lys Ala Thr Glu  
50 55 60

Asp Glu Gly Ser Glu Gln Lys Ile Pro Glu Ala Thr Asn Arg Arg Val  
65 70 75 80

Trp Glu Leu Ser Lys Ala Asn Ser Arg Phe Ala Thr Thr Phe Tyr Gln  
85 90 95

His Leu Ala Asp Ser Lys Asn Asp Asn Asp Asn Ile Phe Leu Ser Pro  
100 105 110

Leu Ser Ile Ser Thr Ala Phe Ala Met Thr Lys Leu Gly Ala Cys Asn  
115 120 125

Asp Thr Leu Gln Gln Leu Met Glu Val Phe Lys Phe Asp Thr Ile Ser  
130 135 140

Glu Lys Thr Ser Asp Gln Ile His Phe Phe Phe Ala Lys Leu Asn Cys  
145 150 155 160

Arg Leu Tyr Arg Lys Ala Asn Lys Ser Ser Lys Leu Val Ser Ala Asn  
165 170 175

Arg Leu Phe Gly Asp Lys Ser Leu Thr Phe Asn Glu Thr Tyr Gln Asp  
180 185 190

Ile Ser Glu Leu Val Tyr Gly Ala Lys Leu Gln Pro Leu Asp Phe Lys  
195 200 205

Glu Asn Ala Glu Gln Ser Arg Ala Ala Ile Asn Lys Trp Val Ser Asn  
210 215 220

Lys Thr Glu Gly Arg Ile Thr Asp Val Ile Pro Ser Glu Ala Ile Asn  
225 230 235 240

Glu Leu Thr Val Leu Val Leu Val Asn Thr Ile Tyr Phe Lys Gly Leu  
245 250 255

Trp Lys Ser Lys Phe Ser Pro Glu Asn Thr Arg Lys Glu Leu Phe Tyr  
260 265 270

Lys Ala Asp Gly Glu Ser Cys Ser Ala Ser Met Met Tyr Gln Glu Gly  
275 280 285

Lys Phe Arg Tyr Arg Arg Val Ala Glu Gly Thr Gln Val Leu Glu Leu  
290 295 300

Pro Phe Lys Gly Asp Asp Ile Thr Met Val Leu Ile Leu Pro Lys Pro  
305 310 315 320

Glu Lys Ser Leu Ala Lys Val Glu Lys Glu Leu Thr Pro Glu Val Leu  
325 330 335

Gln Glu Trp Leu Asp Glu Leu Glu Glu Met Met Leu Val Val His Met  
340 345 350

Pro Arg Phe Arg Ile Glu Asp Gly Phe Ser Leu Lys Glu Gln Leu Gln  
355 360 365

Asp Met Gly Leu Val Asp Leu Phe Ser Pro Glu Lys Ser Lys Leu Pro  
370 375 380

Gly Ile Val Ala Glu Gly Arg Asp Asp Leu Tyr Val Ser Asp Ala Phe  
385 390 395 400

His Lys Ala Phe Leu Glu Val Asn Glu Glu Gly Ser Glu Ala Ala Ala  
405 410 415

Ser Thr Ala Val Val Ile Ala Gly Arg Ser Leu Asn Pro Asn Arg Val  
420 425 430

Thr Phe Lys Ala Asn Arg Pro Phe Leu Val Phe Ile Arg Glu Val Pro  
435 440 445

Leu Asn Thr Ile Ile Phe Met Gly Arg Val Ala Asn Pro Cys Val Lys  
450 455 460

&lt;210&gt; 65

&lt;211&gt; 1962

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 65

atggctcccc tgcgcccccg cgccgcgctg ctggcgctcc tggcctcgct cctggcgcg

60

cccccggtgg ccccgcgoga ggcgccgcac ctggtgcagg tggacgcggc cgcgcgctg  
120

tggccctgc ggcgttctg gaggagcaca ggcttctgcc ccccgctgcc acacagcca  
180

gctgaccagt acgtctcag ctgggaccag cagctcaacc tcgcotatgt gggcgcgctg  
240

cctcacgcg gcataagca ggtccggacc cactggctgc tggagcttgt caccaccagg  
300

gggtccactg gacggggcct gagctacaac ttcaaccacc tggacgggta cttggacctt  
360

ctcagggaga accagctcct cccaggggtt gagctgatgg gcagcgccctc gggccaattc  
420

actgactttg aggacaagca gcaggtgttt gagggaagg acttggctctc cagcctggcg  
480

aggagataca tcggtaggta cggactggcg catgtttcca agtggaaatt cgagacgtgg  
540

aatgagccag accaccaaga ctttgacaac gtctccatga ccatgcaagg cttcctgaac  
600

tactacgatg cctgctcgga gggctctgcg gcgcgcagcc ccgcctcgcg gctgggaggc  
660

cccgcgact ccttcaaac cccacgcga tccccgtga gctggggcct cctgcgccac  
720

tgccacagc gtaccaactt cttaactggg gaggcggcg tgcggtgga ctacatctcc  
780

ctccacagga agggctcgcg cagctccatc tccatcctgg agcaggagaa ggtcgtcgcg  
840

cagcagatcc ggcagctctt cccaagttc gggacaccc ccatttcaa cgacgaggcg  
900

gaccgcgtgg tgggctggtc cctgccaacg ccgtggaggg cggacgtgac ctacgcggcc  
960

atggtggtga aggtcatcgc gcagcatcag aacctgctac tggccaacac cacctccgcc  
1020

ttccctacg cgctcctgag caacgacaat gccttctga gctaccaccc gcacccttc  
1080

ggcagcgca cgtcacccg gcgcttcag gtcaacaaca cccgcccgcc gcagtgacg  
1140

ctgttcgca agccggtgct caccggcatg gggctgctgg cgtctgtgga tgaggagcag  
1200

ctctggggcg aagtgtgca ggcggggacc gtcctggaca gcaaccacac ggtggcgctc  
1260

ctggccagcg cccacagccc ccagggcccg gccgacgcct ggcgcgcgc ggtgctgac  
1320

tacgcgagcg acgacacccc cgcccccccc aaccgcagcg tcgcgggtgac cctgcgggctg  
1380

cgcggggtgc cccccggccc gggcctggtc tacgtcacgc gctacctgga caacgggctc  
1440

tgcagccccc acggcgagtg gcggcgccctg ggcgcgcgc tcttccccac ggacagagcag  
1500

tccggcgca tgcgcgcgcg tgaggaccog gtggcgcgcg cgcgccccc cttaccgcgc  
1560

ggcgccccc tgacctgcg cccgcgcctg cggctgcct cgcttttct ggtgcacgtg  
1620

tgtgcgcgc cagagaagcc gccggggcag gtcacgcgcg tcgcgcgcct gccctgacc  
1680

caagggcagc tggttctggt ctggtcgat gaacacgtg gctccaagt cctgtggaca  
1740

tacgatcc agttctctca ggaoggttaag gcgtacccc cggtcagcag gaagccatcg  
1800

acctoaacc tctttgtgtt cagcccagac acaggtgctg tctctggctc ctaccgagtt  
1860

cgagccctgg actactgggc ccgaccaggc cccttctcgg accctgtgcc gtacctggag  
1920

gtccctgtgc caagagggcc cccatcccg ggcaatccat ga  
1962

<210> 66

<211> 653

<212> PRT

<213> Homo sapiens

<400> 66

Met Arg Pro Leu Arg Pro Arg Ala Ala Leu Leu Ala Leu Leu Ala Ser  
1 5 10 15

Leu Leu Ala Ala Pro Pro Val Ala Pro Ala Glu Ala Pro His Leu Val  
20 25 30

Gln Val Asp Ala Ala Arg Ala Leu Trp Pro Leu Arg Arg Phe Trp Arg  
35 40 45

Ser Thr Gly Phe Cys Pro Pro Leu Pro His Ser Gln Ala Asp Gln Tyr  
50 55 60

Val Leu Ser Trp Asp Gln Gln Leu Asn Leu Ala Tyr Val Gly Ala Val  
65 70 75 80

Pro His Arg Gly Ile Lys Gln Val Arg Thr His Trp Leu Leu Glu Leu  
85 90 95

Val Thr Thr Arg Gly Ser Thr Gly Arg Gly Leu Ser Tyr Asn Phe Thr

100										105										110											
His	Leu	Asp	Gly	Tyr	Leu	Asp	Leu	Leu	Arg	Glu	Asn	Gln	Leu	Leu	Pro																
115										120										125											
Gly	Phe	Glu	Leu	Met	Gly	Ser	Ala	Ser	Gly	His	Phe	Thr	Asp	Phe	Glu																
130										135										140											
Asp	Lys	Gln	Gln	Val	Phe	Glu	Trp	Lys	Asp	Leu	Val	Ser	Ser	Leu	Ala																
145										150										155											
Arg	Arg	Tyr	Ile	Gly	Arg	Tyr	Gly	Leu	Ala	His	Val	Ser	Lys	Trp	Asn																
165										170										175											
Phe	Glu	Thr	Trp	Asn	Glu	Pro	Asp	His	His	Asp	Phe	Asp	Asn	Val	Ser																
180										185										190											
Met	Thr	Met	Gln	Gly	Phe	Leu	Asn	Tyr	Tyr	Asp	Ala	Cys	Ser	Glu	Gly																
195										200										205											
Leu	Arg	Ala	Ala	Ser	Pro	Ala	Leu	Arg	Leu	Gly	Gly	Pro	Gly	Asp	Ser																
210										215										220											
Phe	His	Thr	Pro	Pro	Arg	Ser	Pro	Leu	Ser	Trp	Gly	Leu	Leu	Arg	His																
225										230										235											
Cys	His	Asp	Gly	Thr	Asn	Phe	Phe	Thr	Gly	Glu	Ala	Gly	Val	Arg	Leu																
245										250										255											
Asp	Tyr	Ile	Ser	Leu	His	Arg	Lys	Gly	Ala	Arg	Ser	Ser	Ile	Ser	Ile																
260										265										270											
Leu	Glu	Gln	Glu	Lys	Val	Val	Ala	Gln	Gln	Ile	Arg	Gln	Leu	Phe	Pro																
275										280										285											
Lys	Phe	Ala	Asp	Thr	Pro	Ile	Tyr	Asn	Asp	Glu	Ala	Asp	Pro	Leu	Val																
290										295										300											
Gly	Trp	Ser	Leu	Pro	Gln	Pro	Trp	Arg	Ala	Asp	Val	Thr	Tyr	Ala	Ala																
305										310										315											
Met	Val	Val	Lys	Val	Ile	Ala	Gln	His	Gln	Asn	Leu	Leu	Leu	Ala	Asn																
325										330										335											
Thr	Thr	Ser	Ala	Phe	Pro	Tyr	Ala	Leu	Leu	Ser	Asn	Asp	Asn	Ala	Phe																
340										345										350											
Leu	Ser	Tyr	His	Pro	His	Pro	Phe	Ala	Gln	Arg	Thr	Leu	Thr	Ala	Arg																
355										360										365											
Phe	Gln	Val	Asn	Asn	Thr	Arg	Pro	Pro	His	Val	Gln	Leu	Leu	Arg	Lys																
370										375										380											
Pro	Val	Leu	Thr	Ala	Met	Gly	Leu	Leu	Ala	Leu	Leu	Asp	Glu	Gln	Gln																
385										390										395											
Leu	Trp	Ala	Glu	Val	Ser	Gln	Ala	Gly	Thr	Val	Leu	Asp	Ser	Asn	His																
405										410										415											
Thr	Val	Gly	Val	Leu	Ala	Ser	Ala	His	Arg	Pro	Gln	Gly	Pro	Ala	Asp																
420										425										430											



Ala Trp Arg Ala Ala Val Leu Ile Tyr Ala Ser Asp Asp Thr Arg Ala  
 435 440 445

His Pro Asn Arg Ser Val Ala Val Thr Leu Arg Leu Arg Gly Val Pro  
 450 455 460

Pro Gly Pro Gly Leu Val Tyr Val Thr Arg Tyr Leu Asp Asn Gly Leu  
 465 470 475 480

Cys Ser Pro Asp Gly Glu Trp Arg Arg Leu Gly Arg Pro Val Phe Pro  
 485 490 495

Thr Ala Glu Gln Phe Arg Arg Met Arg Ala Ala Glu Asp Pro Val Ala  
 500 505 510

Ala Ala Pro Arg Pro Leu Pro Ala Gly Gly Arg Leu Thr Leu Arg Pro  
 515 520 525

Ala Leu Arg Leu Pro Ser Leu Leu Val His Val Cys Ala Arg Pro  
 530 535 540

Glu Lys Pro Pro Gly Gln Val Thr Arg Leu Arg Ala Leu Pro Leu Thr  
 545 550 555 560

Gln Gly Gln Leu Val Leu Val Trp Ser Asp Glu His Val Gly Ser Lys  
 565 570 575

Cys Leu Trp Thr Tyr Glu Ile Gln Phe Ser Gln Asp Gly Lys Ala Tyr  
 580 585 590

Thr Pro Val Ser Arg Lys Pro Ser Thr Phe Asn Leu Phe Val Phe Ser  
 595 600 605

Pro Asp Thr Gly Ala Val Ser Gly Ser Tyr Arg Val Arg Ala Leu Asp  
 610 615 620

Tyr Trp Ala Arg Pro Gly Pro Phe Ser Asp Pro Val Pro Tyr Leu Glu  
 625 630 635 640

Val Pro Val Pro Arg Gly Pro Pro Ser Pro Gly Asn Pro  
 645 650

&lt;210&gt; 67

&lt;211&gt; 1290

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 67

atgcagctga ggaaccacaga actacatctg ggctgcgcgc ttgcgcttcg cttcctggcc  
 60

ctcgtttcct gggacatccc tggggctaga gcaactggaca atggattggc aaggacgcct  
 120

accatgggct ggctgcactg ggagcgcttc atgtgcaacc ttgactgccca ggaagagcca  
 180

gattcctgca tcagtgagaa gctcttcctg gagatggcag agctcatggt ctcagaaggc  
 240

tggaaggatg cagggttatga gtacctctgc attgatgact gttggatggc tccccaaga  
300

gattcagaag gcagacttca ggcagacctc cagcgcttcc ctcatgggat tcgccagcta  
360

gctaattatg ttcacagcaa aggactgaag ctagggtatt atgcagatgt tggaaataaa  
420

acctgcgcag gcttccctgg gagttttgga tactacgaca ttgatgccca gacctttgct  
480

gactggggag tagatctgct aaaatttgat ggttggtact gtgacagttt ggaaaatttg  
540

gcagatgggt ataagcacat gtccctggcc ctgaatagga ctggcagaag cattgtgtac  
600

tcctgtgagt ggccctctta tatgtggccc ttcaaaagc ccaattatac agaaatccga  
660

cagtactgca atcactggcg aaattttgct gacattgatg attcctggaa aagtataaag  
720

agtatcttgg actggacatc ttttaaccag gagagaattg ttgatgttgc tggaccaggg  
780

ggttggaatg acccagatat gttagtgtt ggcaactttg gcctcagctg gaatcagcaa  
840

gtaactcaga tggccctctg ggctatcatg gctgctcctt tattcatgtc taatgacctc  
900

cgacacatca gccctcaagc caaagctctc cttcaggata aggacgtaat tgcctcaat  
960

caggacctct tgggcaagca aggttaccag cttagacagg gagacaactt tgaagtgtgg  
1020

gaacgacctc tctcaggctt agcctgggct gtacttatga taaaccggca ggagatttgt  
1080

ggacctgctg cttataccat cgcagttgct tccctgggta aaggagtggc ctgtaatcct  
1140

gcctgcttca tcacacagct cctccctgtg aaaaggaagc tagggttcta tgaatggact  
1200

tcaaggttaa gaagtcacat aaatcccaca ggcactgttt tgcttcagct agaaaataca  
1260

atgcagatgt cattaaaaga cttactttaa  
1290

<210> 68

<211> 429

<212> PRT

<213> Homo sapiens

<400> 68

Met Gln Leu Arg Asn Pro Glu Leu His Leu Gly Cys Ala Leu Ala Leu

Arg Phe Leu Ala Leu Val Ser Trp Asp Ile Pro Gly Ala Arg Ala Leu  
 20 25 30  
 Asp Asn Gly Leu Ala Arg Thr Pro Thr Met Gly Trp Leu His Trp Glu  
 35 40 45  
 Arg Phe Met Cys Asn Leu Asp Cys Gln Glu Glu Pro Asp Ser Cys Ile  
 50 55 60  
 Ser Glu Lys Leu Phe Met Glu Met Ala Glu Leu Met Val Ser Glu Gly  
 65 70 75 80  
 Trp Lys Asp Ala Gly Tyr Glu Tyr Leu Cys Ile Asp Asp Cys Trp Met  
 85 90 95  
 Ala Pro Gln Arg Asp Ser Glu Gly Arg Leu Gln Ala Asp Pro Gln Arg  
 100 105 110  
 Phe Pro His Gly Ile Arg Gln Leu Ala Asn Tyr Val His Ser Lys Gly  
 115 120 125  
 Leu Lys Leu Gly Ile Tyr Ala Asp Val Gly Asn Lys Thr Cys Ala Gly  
 130 135 140  
 Phe Pro Gly Ser Phe Gly Tyr Tyr Asp Ile Asp Ala Gln Thr Phe Ala  
 145 150 155 160  
 Asp Trp Gly Val Asp Leu Leu Lys Phe Asp Gly Cys Tyr Cys Asp Ser  
 165 170 175  
 Leu Glu Asn Leu Ala Asp Gly Tyr Lys His Met Ser Leu Ala Leu Asn  
 180 185 190  
 Arg Thr Gly Arg Ser Ile Val Tyr Ser Cys Glu Trp Pro Leu Tyr Met  
 195 200 205  
 Trp Pro Phe Gln Lys Pro Asn Tyr Thr Glu Ile Arg Gln Tyr Cys Asn  
 210 215 220  
 His Trp Arg Asn Phe Ala Asp Ile Asp Asp Ser Trp Lys Ser Ile Lys  
 225 230 235 240  
 Ser Ile Leu Asp Trp Thr Ser Phe Asn Gln Glu Arg Ile Val Asp Val  
 245 250 255  
 Ala Gly Pro Gly Gly Trp Asn Asp Pro Asp Met Leu Val Ile Gly Asn  
 260 265 270  
 Phe Gly Leu Ser Trp Asn Gln Gln Val Thr Gln Met Ala Leu Trp Ala  
 275 280 285  
 Ile Met Ala Ala Pro Leu Phe Met Ser Asn Asp Leu Arg His Ile Ser  
 290 295 300  
 Pro Gln Ala Lys Ala Leu Leu Gln Asp Lys Asp Val Ile Ala Ile Asn  
 305 310 315 320  
 Gln Asp Pro Leu Gly Lys Gln Gly Tyr Gln Leu Arg Gln Gly Asp Asn  
 325 330 335

Phe Glu Val Trp Glu Arg Pro Leu Ser Gly Leu Ala Trp Ala Val Ala  
 340 345 350  
 Met Ile Asn Arg Gln Glu Ile Gly Gly Pro Arg Ser Tyr Thr Ile Ala  
 355 360 365  
 Val Ala Ser Leu Gly Lys Gly Val Ala Cys Asn Pro Ala Cys Phe Ile  
 370 375 380  
 Thr Gln Leu Leu Pro Val Lys Arg Lys Leu Gly Phe Tyr Glu Trp Thr  
 385 390 395 400  
 Ser Arg Leu Arg Ser His Ile Asn Pro Thr Gly Thr Val Leu Leu Gln  
 405 410 415  
 Leu Glu Asn Thr Met Gln Met Ser Leu Lys Asp Leu Leu  
 420 425

<210> 69  
 <211> 351  
 <212> DNA  
 <213> Homo sapiens

<400> 69  
 atggattact acagaaata tgcagctatc tttctggcca cattgtcggt gttctgcat  
 60

gttctccatt cgcctcctga tgtgcaggat tgcccagaat gcacgtaca ggaaccaca  
 120

ttcttctccc agccgggtgc cccaatactt cagtgcattg gctgctgctt ctctagagca  
 180

tatccactc cactaaggtc caagaagacg atgttggtcc aaaagaacgt cacctcagag  
 240

tccacttgct gtgtagctaa atcatataac agggtcacag taatgggggg ttccaaagt  
 300

gagaaccaca cggcgtgcca ctgcagtact tgttattatc acaaatotta a  
 351

<210> 70  
 <211> 116  
 <212> PRT  
 <213> Homo sapiens

<400> 70  
 Met Asp Tyr Tyr Arg Lys Tyr Ala Ala Ile Phe Leu Val Thr Leu Ser  
 1 5 10 15

Val Phe Leu His Val Leu His Ser Ala Pro Asp Val Gln Asp Cys Pro  
 20 25 30

Glu Cys Thr Leu Gln Glu Asn Pro Phe Phe Ser Gln Pro Gly Ala Pro  
 35 40 45

Ile Leu Gln Cys Met Gly Cys Cys Phe Ser Arg Ala Tyr Pro Thr Pro  
 50 55 60

Leu Arg Ser Lys Lys Thr Met Leu Val Gln Lys Asn Val Thr Ser Glu  
65 70 75 80

Ser Thr Cys Cys Val Ala Lys Ser Tyr Asn Arg Val Thr Val Met Gly  
85 90 95

Gly Phe Lys Val Glu Asn His Thr Ala Cys His Cys Ser Thr Cys Tyr  
100 105 110

Tyr His Lys Ser  
115

<210> 71

<211> 498

<212> DNA

<213> Homo sapiens

<400> 71

atggagatgt tccaggggct gctgctgttg ctgctgctga gcatggggcg gacatgggca  
60

tccaaggagc cgcttcggcc acggtgccgc cccatcaatg ccacctggc tgtggagaag  
120

gagggctgcc ccgtgtgcat caccgtcaac accaccatct gtgcgggcta ctgcccacc  
180

atgacccgag tgctgcaggg ggctctgccc gccctgcctc aggtggtgtg caactaccg  
240

gatgtgogct tcgagtccat ccggtccct ggctgcccgc gcggcgtgaa ccccggtgc  
300

tcctacggcg tggctctcag ctgtcaatgt gcactctgcc gcgcagcac cactgactgc  
360

gggggtccca aggaccacc ctgacctgt gatgacccc gcttcaggga ctctcttcc  
420

tcaaaggccc ctccccag ccttccaagc ccattccgac tccgggggcc ctggacacc  
480

ccgatactcc cacaataa  
498

<210> 72

<211> 165

<212> PRT

<213> Homo sapiens

<400> 72

Met Glu Met Phe Gln Gly Leu Leu Leu Leu Leu Ser Met Gly  
1 5 10 15

Gly Thr Trp Ala Ser Lys Glu Pro Leu Arg Pro Arg Cys Arg Pro Ile  
20 25 30

Asn Ala Thr Leu Ala Val Glu Lys Glu Gly Cys Pro Val Cys Ile Thr  
35 40 45

Val Asn Thr Thr Ile Cys Ala Gly Tyr Cys Pro Thr Met Thr Arg Val

50

55

60

Leu Gln Gly Val Leu Pro Ala Leu Pro Gln Val Val Cys Asn Tyr Arg  
65 70 75 80

Asp Val Arg Phe Glu Ser Ile Arg Leu Pro Gly Cys Pro Arg Gly Val  
85 90 95

Asn Pro Val Val Ser Tyr Ala Val Ala Leu Ser Cys Gln Cys Ala Leu  
100 105 110

Cys Arg Arg Ser Thr Thr Asp Cys Gly Gly Pro Lys Asp His Pro Leu  
115 120 125

Thr Cys Asp Asp Pro Arg Phe Gln Asp Ser Ser Ser Ser Lys Ala Pro  
130 135 140

Pro Pro Ser Leu Pro Ser Pro Ser Arg Leu Pro Gly Pro Ser Asp Thr  
145 150 155 160

Pro Ile Leu Pro Gln  
165

<210> 73

<211> 165

<212> PRT

<213> Homo sapiens

<400> 73

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu  
1 5 10 15

Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His  
20 25 30

Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe  
35 40 45

Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp  
50 55 60

Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu  
65 70 75 80

Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp  
85 90 95

Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu  
100 105 110

Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala  
115 120 125

Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val  
130 135 140

Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala  
145 150 155 160

Cys Arg Thr Gly Asp  
165

<210> 74  
 <211> 588  
 <212> DNA  
 <213> Homo sapiens

<400> 74  
 atggccctcc tgttccctct actggcagcc ctagtatga ccagctatag cctgtgtgga  
 60

tctctgggct gtgatctgcc tcagaacctt ggccacttta gcaggaacac cttgggtgctt  
 120

ctgcacaaaa tgaggagaat ctcccctttc ttgtgtctca aggacagaag agacttcagg  
 180

ttccccccagg agatggtaaa agggagccag ttgcagaagg cccatgtcat gtctgtcctc  
 240

catgagatgc tgcagcagat cttcagcctc ttccacacag agcgctcctc tgetgctg  
 300

aacatgaccc tcttagacca actccacact ggacttcac agcaactgca acacctggag  
 360

acctgcttc tgcaggtagt gggagaagga gaatctgctg ggcaattag cagccctgca  
 420

ctgaccttga ggaggtactt ccaggggaatc cgtgtctacc tgaagagaa gaaatacagc  
 480

gactgtgcct gggaggttgt cagaatggaa atcatgaaat cctgttctt atcaacaaa  
 540

atgcaagaaa gactgagaag taaagataga gacctgggct catcttga  
 588

<210> 75  
 <211> 195  
 <212> PRT  
 <213> Homo sapiens

<400> 75  
 Met Ala Leu Leu Phe Pro Leu Leu Ala Ala Leu Val Met Thr Ser Tyr  
 1 5 10 15

Ser Pro Val Gly Ser Leu Gly Cys Asp Leu Pro Gln Asn His Gly Leu  
 20 25 30

Leu Ser Arg Asn Thr Leu Val Leu Leu His Gln Met Arg Arg Ile Ser  
 35 40 45

Pro Phe Leu Cys Leu Lys Asp Arg Arg Asp Phe Arg Phe Pro Gln Glu  
 50 55 60

Met Val Lys Gly Ser Gln Leu Gln Lys Ala His Val Met Ser Val Leu  
 65 70 75 80

His Glu Met Leu Gln Gln Ile Phe Ser Leu Phe His Thr Glu Arg Ser  
 85 90 95

Ser Ala Ala Trp Asn Met Thr Leu Leu Asp Gln Leu His Thr Gly Leu  
 100 105 110  
 His Gln Gln Leu Gln His Leu Glu Thr Cys Leu Leu Gln Val Val Gly  
 115 120 125  
 Glu Gly Glu Ser Ala Gly Ala Ile Ser Ser Pro Ala Leu Thr Leu Arg  
 130 135 140  
 Arg Tyr Phe Gln Gly Ile Arg Val Tyr Leu Lys Glu Lys Lys Tyr Ser  
 145 150 155 160  
 Asp Cys Ala Trp Glu Val Val Arg Met Glu Ile Met Lys Ser Leu Phe  
 165 170 175  
 Leu Ser Thr Asn Met Gln Glu Arg Leu Arg Ser Lys Asp Arg Asp Leu  
 180 185 190  
 Gly Ser Ser  
 195

1996240.1